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=> d his

     (FILE 'HOME' ENTERED AT 15:28:21 ON 30 MAY 2007)

     FILE 'REGISTRY' ENTERED AT 15:28:31 ON 30 MAY 2007
L1             0 S 13774-81-7/CN
L2             1 S 13774-81-7

     FILE 'CAPLUS, MEDLINE' ENTERED AT 15:29:51 ON 30 MAY 2007
L3           405 S L2
L4             3 S L3 AND GLYCOPROTEIN?
L5             0 S L4 AND ?OLIGOSACCH?
L6             1 S L4 AND ?SACCH?
L7             0 S L4 AND ?ALDITOL?
L8             0 S L3 AND ?OLIGOSACCH?
L9             3 S L3 AND PROTEOGLYCAN?
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=> d his

     (FILE 'HOME' ENTERED AT 12:18:32 ON 30 MAY 2007)

     FILE 'REGISTRY' ENTERED AT 12:18:47 ON 30 MAY 2007
                E BORANE-AMMONIA/CN
                E BORANE AMMONIA/CN
                E BORANE COMPLEX WITH AMMONIA/CN
                E BH3.NH3 COMPLEX/CN
                E BH3.NH3/CN
                E NH3.BH3/CN
                E AMMONIUM HYDROXIDE/SODIUM HYDROXIDE/CN

     FILE 'CAPLUS, MEDLINE' ENTERED AT 12:24:22 ON 30 MAY 2007
L1             59 S BORANE-AMMONIA
L2              3 S L1 AND GLYCOPROTEIN?
L3              3 S L1 AND OLIGOSACCHARIDE?
L4              4 S L1 AND CLEAV?
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L2 1 ANSWERS REGISTRY COPYRIGHT 2007 ACS on STN
IN Boron, amminetrihydro-, (T-4)- (9CI)
MF B H6 N
CI CCS, COM

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

ALL ANSWERS HAVE BEEN SCANNED

L1 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:414514 CAPLUS
DOCUMENT NUMBER: 140:407067
TITLE: Method of preparation of oligosaccharides
INVENTOR(S): Huang, Yunping; Konse, Tomonori; Mechref, Yehia S.; Novotny, Milos V.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004096933	A1	20040520	US 2003-664462	20030919
WO 2004045502	A2	20040603	WO 2003-US34088	20031024
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003285006	A1	20040615	AU 2003-285006	20031024

PRIORITY APPLN. INFO.:

US 2002-426861P	P	20021115
US 2003-664462	A	20030919
WO 2003-US34088	W	20031024

AB The invention provides a method of cleaving an O-linked oligosaccharide from a glycoprotein. The method comprises the steps of contacting a composition comprising a glycoprotein, wherein the glycoprotein comprises O-linked oligosaccharides, with a solution comprising a BH3-NH3 complex to form a mixture comprising the glycoprotein and the BH3-NH3 complex, incubating the mixture for a period of time sufficient to cleave the linked oligosaccharides from the glycoprotein, and forming a mixture comprising oligosaccharide alditol products and deglycosylated protein byproducts.

L1 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:414514 CAPLUS
DOCUMENT NUMBER: 140:407067
TITLE: Method of preparation of oligosaccharides
INVENTOR(S): Huang, Yunping; Konse, Tomonori; Mechref, Yehia S.; Novotny, Milos V.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004096933	A1	20040520	US 2003-664462	20030919
WO 2004045502	A2	20040603	WO 2003-US34088	20031024

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2003285006	A1	20040615	AU 2003-285006		20031024
PRIORITY APPLN. INFO.:			US 2002-426861P	P	20021115
			US 2003-664462	A	20030919
			WO 2003-US34088	W	20031024

AB The invention provides a method of cleaving an O-linked oligosaccharide from a glycoprotein. The method comprises the steps of contacting a composition comprising a glycoprotein, wherein the glycoprotein comprises O-linked oligosaccharides, with a solution comprising a BH3-NH3 complex to form a mixture comprising the glycoprotein and the BH3-NH3 complex, incubating the mixture for a period of time sufficient to cleave the linked oligosaccharides from the glycoprotein, and forming a mixture comprising oligosaccharide alditol products and deglycosylated protein byproducts.

L1 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:469613 CAPLUS
DOCUMENT NUMBER: 137:259501
TITLE: Matrix-assisted laser desorption/ionization mass spectrometry compatible β-elimination of O-linked oligosaccharides
AUTHOR(S): Huang, Yunping; Konse, Tomonori; Mechref, Yehia; Novotny, Milos V.
CORPORATE SOURCE: Department of Chemistry, Indiana University, Bloomington, IN, 47405, USA
SOURCE: Rapid Communications in Mass Spectrometry (2002), 16(12), 1199-1204
CODEN: RCMSEF; ISSN: 0951-4198
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A new β-elimination procedure has been introduced to cleave O-linked oligosaccharides from low- to sub-microgram amts. of glycoproteins prior to anal. by mass spectrometry. Borane-ammonia complex in aqueous ammonia is used as a cleaving solution alternative to the sodium borohydride/sodium hydroxide medium conventionally used in β-elimination. The procedure results in min. sample purification, leading

to minimal sample loss and consequently an overall enhancement in sensitivity. It was applied successfully in the anal. of bovine fetuin and submaxillary mucin, as well as to a complex bile-salt-stimulated lipase glycoprotein isolated from human milk.

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 3 OF 3 MEDLINE on STN

ACCESSION NUMBER: 2002361578 MEDLINE

DOCUMENT NUMBER: PubMed ID: 12112272

TITLE: Matrix-assisted laser desorption/ionization mass spectrometry compatible beta-elimination of O-linked oligosaccharides.

AUTHOR: Huang Yunping; Konse Tomonori; Mechref Yehia; Novotny Milos V

CORPORATE SOURCE: Department of Chemistry, Indiana University, Bloomington, IN 47405, USA.

SOURCE: Rapid communications in mass spectrometry : RCM, (2002) Vol. 16, No. 12, pp. 1199-204.
Journal code: 8802365. ISSN: 0951-4198.

PUB. COUNTRY: England: United Kingdom

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, NON-P.H.S.)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 200208

ENTRY DATE: Entered STN: 12 Jul 2002
Last Updated on STN: 13 Aug 2002
Entered Medline: 12 Aug 2002

AB A new beta-elimination procedure has been introduced to cleave O-linked oligosaccharides from low- to sub-microgram amounts of glycoproteins prior to analysis by mass spectrometry. Borane-ammonia complex in aqueous ammonia is used as a cleaving solution alternative to the sodium borohydride/sodium hydroxide medium conventionally used in beta-elimination. The procedure results in minimum sample purification, leading to minimal sample loss and consequently an overall enhancement in sensitivity. It was applied successfully in the analysis of bovine fetuin and submaxillary mucin, as well as to a complex bile-salt-stimulated lipase glycoprotein isolated from human milk.

L3 ANSWER 8 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1988:18588 CAPLUS
DOCUMENT NUMBER: 108:18588
TITLE: Effect of hydroxyorganoboranes on synthesis, transport and N-linked glycosylation of plasma proteins
AUTHOR(S): Goldberger, Gabriel; Paz, Mercedes A.; Torrelio, B. Marina; Okamoto, Yoshiaki; Gallop, Paul M.
CORPORATE SOURCE: Harvard Sch. Med., Child. Hosp. Corp., Boston, MA, 02115, USA
SOURCE: Biochemical and Biophysical Research Communications (1987), 148(1), 493-9
CODEN: BBRCA9; ISSN: 0006-291X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB By using a recently developed method (Boradeption) for transfering water-insol. hydroxyorganoborane compds. into cells, inhibition of protein synthesis by 3 of these compds. and inhibition of secretion of plasma proteins by 4 of them were observed in human hepatoma HepG2 cells. These effects were specific in that the cell viability was not affected and an increase in protein catabolism was not observed Three compds. caused compound-specific alterations in the electrophoretic mobility of secreted glycoproteins due to underlying changes in the N-linked carbohydrate moieties. Results presented suggest a potential new source of cellular probes.

L3 ANSWER 9 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1986:568335 CAPLUS
DOCUMENT NUMBER: 105:168335
TITLE: Optimization of erythrocyte membrane glycoprotein fluorescent labeling with dansylhydrazine after polyacrylamide gel electrophoresis
AUTHOR(S): Estep, Timothy N.; Miller, Theresa J.
CORPORATE SOURCE: Fenwal Div., Travenol Lab., Inc., Round Lake, IL, 60073, USA
SOURCE: Analytical Biochemistry (1986), 157(1), 100-5
CODEN: ANBCA2; ISSN: 0003-2697
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The title procedure is derived from the work of A. E. Eckhard et al. (1976) and P. Weber and L. Hof (1975) who showed that dansylhydrazine may be condensed with the aldehyde groups of oxidized glycoprotein carbohydrates and the resulting hydrazones reduced with dimethylamine borane and/or sodium borohydride. Using the known distribution of erythrocyte membrane glycoproteins as a benchmark the effect of variation of a number of process parameters was investigated and an optimal procedure identified. The procedure was relatively insensitive to moderate variations in reagent composition, pH, and time of incubation with dansylhydrazine solution or reducing agents. Labeling patterns may be preserved in dried gels if dimethylsulfoxide is replaced or omitted from all of the process solns. and destaining is effected with 1M NaOAc, pH 5.6. While specifically developed for the labeling of erythrocyte membrane proteins, the procedure applicable to other glycoprotein containing prepns.

L3 ANSWER 10 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1986:145817 CAPLUS
DOCUMENT NUMBER: 104:145817
TITLE: The incorporation of 3H-fucose and 3H-mannose into the photopigment of the crayfish Procambarus clarkii
AUTHOR(S): Hafner, G. S.; Tokarski, T. R.
CORPORATE SOURCE: Sch. Optom., Indiana Univ., Bloomington, IN, 47405, USA
SOURCE: Cell & Tissue Research (1986), 243(1), 109-15

CODEN: CTSRCS; ISSN: 0302-766X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Isolated crayfish retinas were incubated for 8 h in the light in a medium containing either [3H]fucose or [3H]mannose. Following this incubation, the rhabdom membranes were isolated, the pigment reduced with borane dimethylamine, and extracted with SDS. The membrane-protein extract was separated by SDS-polyacrylamide gel electrophoresis. The photopigment band on the gels was identified by its fluorescence after exposure to long-wavelength UV light. Determination of the distribution of radioactivity in the gels indicated that both fucose and mannose labeled the photopigment and other glycoproteins. Hydrolysis of the sugars from the labeled photopigment bands, followed by TLC, further confirmed that both sugars were incorporated into newly synthesized photopigment without modification. These results provide the first reported data on the partial composition of the carbohydrate moiety of an invertebrate photopigment. These findings on the crayfish photopigment are compared with data from vertebrate rhodopsin and photopigment of other invertebrates.

L3 ANSWER 11 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1985:419247 CAPLUS
DOCUMENT NUMBER: 103:19247
TITLE: An improved method for the liquid chromatography of the 1-deoxy-1-(2-pyridylamino)alditol derivatives of oligosaccharides and its application to structural studies of the carbohydrate moieties of glycoproteins
AUTHOR(S): Tang, Ping W.; Williams, J. Michael
CORPORATE SOURCE: Chem. Dep., Univ. Coll. Swansea, Swansea, SA2 8PP, UK
SOURCE: Carbohydrate Research (1985), 136, 259-71
CODEN: CRBRAT; ISSN: 0008-6215
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The 1-deoxy-1-(2-pyridylamino)alditols prepared by reductive amination of lactose, 2-acetamido-2-deoxy-D-glucose, and 2,5-anhydro-D-mannose were characterized, and the efficiency of the reductive amination procedure, especially with 2,5-anhydro-D-mannose and 2-amino-2-deoxy-D-glucose hydrazone as starting materials, has been studied. The latter compound, which is a model for the oligosaccharide hydrazones released from glycoproteins and glycopeptides by hydrazinolysis, was first N-acetylated and the hydrazone group was found to be removed hydrolytically when a cation-exchange resin was used for deionization. Such loss of the hydrazone group is desirable because the N-acetylated hydrazone was not efficiently derivatized by reductive amination. An amine-modified silica column was used to sep. the components of a mixture of the pyridylamino derivs. of oligosaccharides from mono- to dodeca-saccharide in 20 min. A neutral fluorescent byproduct, formed in all reductive aminations, was identified as (2-amino-1-pyridyl)cyanoborane and was eluted well before monosaccharide derivs. and thus did not interfere with the anal.

L3 ANSWER 12 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1968:433051 CAPLUS
DOCUMENT NUMBER: 69:33051
TITLE: Glycoproteins. XVIII. Formation of diborane and dimethoxyborane in the lithium borohydride test for esters as a source of misinterpretation
AUTHOR(S): Gottschalk, A.; Koenig, W.
CORPORATE SOURCE: Univ. Tuebingen, Tuebingen, Fed. Rep. Ger.
SOURCE: Biochimica et Biophysica Acta, General Subjects (1968), 158(3), 358-62
CODEN: BBGSB3; ISSN: 0304-4165

DOCUMENT TYPE: Journal
LANGUAGE: English

AB LiBH4 in tetrahydrofuran is known to reduce esterified carboxyl groups but not free carboxyl groups. When, however, in this test for esters excess LiBH4 was decomposed by water-free methanolic HCl, a volatile borohydride was formed, part of which was carried out of solution by the H evolved and reacted in a receiver with water to form boric acid. The boric acid was identifed by mass spectrometry. Most likely the volatile substance is dimethoxyborane, produced by interaction between MeOH and diborane; diborane is generated by the action of HCl on LiBH4. Both diborane and dimethoxyborane will readily reduce carboxylic acids in tetrahydrofuran solution When excess LiBH4 is decomposed by methanolic HCl, prepared from MeOH and concentrate HCl, complete destruction of the hydride H takes place in the partially aqueous system, as indicated by the failure to detect boric acid or any other nonvolatile B compound in the receiver. The findings may explain earlier results which suggested the presence of glycosidic-ester linkages in ovine and bovine submaxillary gland glycoproteins. 18 references.

L3 ANSWER 13 OF 16 MEDLINE on STN

ACCESSION NUMBER: 2005616242 MEDLINE
DOCUMENT NUMBER: PubMed ID: 16185886
TITLE: Novel boronated derivatives of 5,10,15,20-tetraphenylporphyrin: synthesis and toxicity for drug-resistant tumor cells.
AUTHOR: Ol'shevskaya Valentina A; Zaitsev Andrei V; Luzgina Valentina N; Kondratieva Tatyana T; Ivanov Oleg G; Kononova Elena G; Petrovskii Pavel V; Mironov Andrei F; Kalinin Valery N; Hofmann Johann; Shtil Alexander A
CORPORATE SOURCE: A. N. Nesmeyanov Institute of Organoelement Compounds, 28 Vavilov Street, 119991 Moscow, Russia.. olshevsk@ineos.ac.ru
SOURCE: Bioorganic & medicinal chemistry, (2006 Jan 1) Vol. 14, No. 1, pp. 109-20. Electronic Publication: 2005-09-26. Journal code: 9413298. ISSN: 0968-0896.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200605
ENTRY DATE: Entered STN: 22 Nov 2005
Last Updated on STN: 5 May 2006
Entered Medline: 4 May 2006

AB We have developed the synthesis of boronated porphyrins for potential application in cancer treatment, based on the functional derivatives of 5,10,15,20-tetraphenylporphyrin. Boronated amide derivatives starting from 5,10,15,20-tetra(p-aminophenyl)porphyrin and 9-o- and 9-m-carborane carboxylic acid chlorides were prepared. Also, the reaction of 2-formyl-5,10,15,20-tetraphenylporphyrin with closo-C-lithium-o- and m-carboranes, as well as with closo-C-lithium monocarbon carborane, yielded neutral and anionic boronated hydroxy derivatives of 5,10,15,20-tetraphenylporphyrin, respectively. Water-soluble forms of neutral compounds were prepared by deboronation of closo-polyhedra with Bu4NF into nido-7,8- and nido-7,9-dicarbaundecaborate anions. Monocarbon carborane conjugated with copper (II) complex of 5,10,15,20-tetraphenylporphyrin was active for a variety of tumor cell lines (IC50 approximately 5 microM after 48-72 h of exposure) but was inert for non-malignant fibroblasts at up to 100 microM. At low micromolar concentrations, this compound caused the death of cells that express P-glycoprotein and other mechanisms of resistance to conventional anticancer drugs.

L3 ANSWER 14 OF 16 MEDLINE on STN

ACCESSION NUMBER: 88049704 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2823813
TITLE: Effect of hydroxyorganoboranes on synthesis, transport and N-linked glycosylation of plasma proteins.
AUTHOR: Goldberger G; Paz M A; Torrelio B M; Okamoto Y; Gallop P M
CORPORATE SOURCE: Department of Orthopaedic Surgery, Children's Hospital Corporation, Harvard School of Medicine, Boston, MA 02115.
CONTRACT NUMBER: AG 04727 (NIA)
AM 34369 (NIADDK)
GM 33293 (NIGMS)
SOURCE: Biochemical and biophysical research communications, (1987 Oct 14) Vol. 148, No. 1, pp. 493-9.
Journal code: 0372516. ISSN: 0006-291X.
PUB. COUNTRY: United States
DOCUMENT TYPE: (COMPARATIVE STUDY)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198712
ENTRY DATE: Entered STN: 5 Mar 1990
Last Updated on STN: 3 Feb 1997
Entered Medline: 1 Dec 1987

AB Utilizing a recently developed method (Boradeption) for transferring water-insoluble hydroxyorganoborane compounds into the cells, we observed inhibition of protein synthesis by three of these compounds and inhibition of secretion of plasma proteins by four of them in human hepatoma HepG2 cells. These effects were specific in that the cell viability was not affected and an increase in protein catabolism was not observed. Three compounds caused a compound-specific alterations in the electrophoretic mobility of secreted glycoproteins due to underlying changes in the N-linked carbohydrate moieties. Results presented suggest a potential new source of cellular probes.

L3 ANSWER 15 OF 16 MEDLINE on STN
ACCESSION NUMBER: 87023782 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3766952
TITLE: Optimization of erythrocyte membrane glycoprotein fluorescent labeling with dansylhydrazine after polyacrylamide gel electrophoresis.
AUTHOR: Estep T N; Miller T J
SOURCE: Analytical biochemistry, (1986 Aug 15) Vol. 157, No. 1, pp. 100-5.
Journal code: 0370535. ISSN: 0003-2697.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198611
ENTRY DATE: Entered STN: 2 Mar 1990
Last Updated on STN: 2 Mar 1990
Entered Medline: 14 Nov 1986

AB An improved procedure for the labeling of glycoproteins with dansylhydrazine subsequent to electrophoresis in polyacrylamide gels is reported. This procedure is derived from the work of Eckhardt et al. (1976, Anal. Biochem. 73, 192-197) and Weber and Hof (1975, Biochem. Biophys. Res. Commun. 65, 1298-1302) who showed that dansylhydrazine may be condensed with the aldehyde groups of oxidized glycoprotein carbohydrates and the resulting hydrazones reduced with dimethylamine borane and/or sodium borohydride. Using the known distribution of erythrocyte membrane glycoproteins as a benchmark the effect of variation of a number of process parameters was investigated and an optimal procedure identified. The procedure is shown to be relatively insensitive to moderate variations in reagent composition, pH, and time of

incubation with dansylhydrazine solution or reducing agents. It is also shown that labeling patterns may be preserved in dried gels if dimethylsulfoxide is replaced or omitted from all of the process solutions and destaining is effected with 1 M sodium acetate, pH 5.6. While specifically developed for the labeling of erythrocyte membrane proteins, the procedure is demonstrated to be applicable to other glycoprotein containing preparations.

L3 ANSWER 16 OF 16 MEDLINE on STN
ACCESSION NUMBER: 68318513 MEDLINE
DOCUMENT NUMBER: PubMed ID: 5660101
TITLE: Studies on glycoproteins. 18. Formation of diborane and dimethoxyborane in the lithium borohydride test for esters as a source of misinterpretation.
AUTHOR: Gorrschalk A; Konig W
SOURCE: Biochimica et biophysica acta, (1968 Jun 24) Vol. 158, No. 3, pp. 358-62.
Journal code: 0217513. ISSN: 0006-3002.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 196808
ENTRY DATE: Entered STN: 1 Jan 1990
Last Updated on STN: 1 Jan 1990
Entered Medline: 27 Aug 1968

L3 ANSWER 1 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2007:512361 CAPLUS
TITLE: Methods of detecting N-and O-linked oligosaccharides in glycoproteins by enzymically cleaving from a glycoprotein
INVENTOR(S): Madson, Michael
PATENT ASSIGNEE(S): Dionex Corporation, USA
SOURCE: U.S. Pat. Appl. Publ., 15pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2007105179	A1	20070510	US 2005-270258	20051109
PRIORITY APPLN. INFO.:			US 2005-270258	20051109

AB Methods for removing N-linked and O-linked oligosaccharides from a glycoprotein including N-linked and O-linked oligosaccharides are provided. N-linked oligosaccharides are enzymically cleaved from a glycoprotein to form cleaved-off N-linked oligosaccharides and residual glycoprotein. Residual glycoprotein is immobilized on a solid substrate. The cleaved-off N-linked oligosaccharides are separated from the residual glycoprotein. Subsequently, O-linked oligosaccharides are separated from the residual glycoprotein to form cleaved-off O-linked oligosaccharides and a residual protein. The cleaved-off O-linked oligosaccharides are separated from the residual protein. The N-linked and O-linked oligosaccharides are thus removed sep. from the glycoprotein, and can be detected sep.

L3 ANSWER 2 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:1233212 CAPLUS
DOCUMENT NUMBER: 144:80559
TITLE: Novel boronated derivatives of 5,10,15,20-tetraphenylporphyrin: Synthesis and toxicity for drug-resistant tumor cells
AUTHOR(S): Ol'shevskaya, Valentina A.; Zaitsev, Andrei V.; Luzgina, Valentina N.; Kondratieva, Tatyana T.; Ivanov, Oleg G.; Kononova, Elena G.; Petrovskii, Pavel V.; Mironov, Andrei F.; Kalinin, Valery N.; Hofmann, Johann; Shtil, Alexander A.
CORPORATE SOURCE: A. N. Nesmeyanov Institute of Organoelement Compounds, Moscow, 119991, Russia
SOURCE: Bioorganic & Medicinal Chemistry (2006), 14(1), 109-120
CODEN: BMECEP; ISSN: 0968-0896
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors have developed the synthesis of boronated porphyrins for potential application in cancer treatment, based on the functional derivs. of 5,10,15,20-tetraphenylporphyrin. Boronated amide derivs. starting from 5,10,15,20-tetra(p-aminophenyl)porphyrin and 9-o- and 9-m-carborane carboxylic acid chlorides were prepared Also, the reaction of 2-formyl-5,10,15,20-tetraphenylporphyrin with closo-C-lithium-o- and m-carboranes, as well as with closo-C-lithium monocarbon carborane, yielded neutral and anionic boronated hydroxy derivs. of 5,10,15,20-tetraphenylporphyrin, resp. Water-soluble forms of neutral compds. were prepared by deboronation of closo-polyhedra with Bu4NF into nido-7,8- and nido-7,9-dicarbaundecaborate anions. Monocarbon carborane conjugated with copper (II) complex of 5,10,15,20-tetraphenylporphyrin was active for a variety of tumor cell lines (IC50 .apprx.5 μM after 48-72 h of exposure) but was

inert for nonmalignant fibroblasts at up to 100 μM. At low micromolar concns., this compound caused the death of cells that express P-glycoprotein and other mechanisms of resistance to conventional anticancer drugs.

REFERENCE COUNT: 62 THERE ARE 62 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 3 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:846361 CAPLUS
DOCUMENT NUMBER: 138:255423
TITLE: Synthesis of β-D-Galp-(1→3)-β-D-Galp-(1→6)-[β-D-Galf-(1→4)]-D-GlcNAc, a tetrasaccharide component of mucins of Trypanosoma cruzi
AUTHOR(S): Gallo-Rodriguez, Carola; Gil-Libarona, M. Agustina; Mendoza, Veronica M.; de Lederkremer, Rosa M.
CORPORATE SOURCE: Facultad de Ciencias Exactas y Naturales, Departamento de Quimica Organica, CIHIDECAR, Universidad de Buenos Aires, Buenos Aires, 1428, Argent.
SOURCE: Tetrahedron (2002), 58(46), 9373-9380
CODEN: TETRAB; ISSN: 0040-4020
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 138:255423

AB The synthesis of free β-D-Galp-(1→3)-β-D-Galp-(1→6)-[β-D-Galf-(1→4)]-D-GlcNAc and the corresponding alditol which has been previously isolated by reductive β-elimination of Trypanosoma cruzi glycoproteins are described. A convergent route was envisioned by condensing an acceptor derivative of β-D-Galf-(1→4)-D-GlcNAc with a donor derivative of β-D-Galp-(1→3)-D-Galp. The trichloroacetimidate method, as well as SnCl4-promoted condensation were utilized for the introduction of the galactofuranosyl unit. On the other hand, the glycosyl-aldonolactone approach, followed by reduction of the lactone with diisoamylborane, and further isomerization to the galactopyranose configuration gave the donor derivative, which was condensed by the trichloroacetimidate method. Moreover, a synthon for the introduction of the β-D-Galp-(1→3)-D-Galf unit is described.

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:881588 CAPLUS
DOCUMENT NUMBER: 134:340680
TITLE: A new method for glycosylation of synthetic Pre-S(2) peptides
AUTHOR(S): Zhou, Ji-jun; Wang, Xiang-zhi; Wu, Yu-zhang; Zou, Li-yun; Zhou, Wei
CORPORATE SOURCE: Inst. Immunol. PLA, Third Military Med. Univ., Chungking, 400038, Peop. Rep. China
SOURCE: Di-San Junyi Daxue Xuebao (2000), 22(10), 965-968
CODEN: DYXUE8; ISSN: 1000-5404
PUBLISHER: Di-San Junyi Daxue
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB Objective To design a new method of glycosylation for studying the relationship between the structural heterogeneity of carbohydrates and biol. activity of glycoproteins. Methods The Pre-S(2) peptides were glycosylated by the covalent binding of carbonyl in open-chain form of monosaccharides (or disaccharides, polysaccharides) to α-(M1)or ε-amino groups (K16) by chemical method, and the residues were situated in or near to the CTL epitope(1 .apprx. 15) of Pre-S(2). Results The yield (%) of mannan, Gal NAc and Glc-Gal glycosylated synthetic

Pre-S(2) in different reaction time were 24.0%, 24.5% and 21.0%. After reducation of C = N to C - N by pyridine-borane complexes the stability of glycosylation could be reinforced. Conclusion This method possesses a high efficiency of glycosylation, but with some shortcomings such as time-consuming and the homogeneity of glycosylation is not good enough.

L3 ANSWER 5 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:793595 CAPLUS
TITLE: Synthesis of orthocarborance linked to L-fucose: Potential compounds for boron neutron capture therapy.
AUTHOR(S): Basak, Prakriti; Lowary, Todd L.
CORPORATE SOURCE: Department of Chemistry, Ohio State University, Columbus, OH, 43210, USA
SOURCE: Abstracts of Papers, 220th ACS National Meeting, Washington, DC, United States, August 20-24, 2000 (2000) CARB-048
CODEN: 69FZC3
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal; Meeting Abstract
LANGUAGE: English
AB Boron Neutron Capture Therapy (BNCT) of cancer is based on the reaction that occurs when a boron-10 nucleus is irradiated with thermal neutrons to yield high energy alpha-particles, a lithium-7 nucleus, and gamma-radiation that can damage cells. Selective damage to cancer cells by BNCT is possible if the boron carrier can selectively target these cells. Considering the fact that high rate of proliferation of tumor cells necessitate a greater requirement of cellular building blocks, L-fucose, a monosaccharide commonly found in glycolipids and glycoproteins of the plasma membrane can serve as a boron carrying vehicle to these target cells. We describe here the synthesis of a panel of ortho-closocarborane derivs. linked to L-fucose (e.g., 1).

L3 ANSWER 6 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:555096 CAPLUS
DOCUMENT NUMBER: 131:306751
TITLE: Anti-HIV-1 activity of carborane derivatives of porphyrins
AUTHOR(S): Debnath, Asim K.; Jiang, Shibo; Strick, Nathan; Lin, Kang; Kahl, Stephen B.; Neurath, A. Robert
CORPORATE SOURCE: Laboratory of Biochemical Virology, The New York Blood Center, Lindsley F. Kimball Research Institute, New York, NY, 10021, USA
SOURCE: Medicinal Chemistry Research (1999), 9(4), 267-275
CODEN: MCREEB; ISSN: 1054-2523
PUBLISHER: Birkhaeuser Boston
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Recent observations that some porphyrins selectively bind to the V3 loop of the human immunodeficiency virus (HIV-1) envelope glycoprotein gp120 and have anti-HIV-1 activity prompted us to test for anti-HIV-1 activity a set of boronated porphyrins originally designed as neutron capture agents. Some of these porphyrins blocked the binding to gp120 of two V3 loop specific mAbs and inhibited HIV-1 infection of a CD4+ T cell line (MT-2).
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 7 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1992:546751 CAPLUS
DOCUMENT NUMBER: 117:146751
TITLE: Reagent kits and method for sugar composition or structure determination
INVENTOR(S): Suzuki, Jun; Kondo, Akihiro; Kato, Ikunoshin; Hase, Sumihiro

PATENT ASSIGNEE(S): Takara Shuzo K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04086555	A	19920319	JP 1990-201192	19900731
JP 2883175	B2	19990419		
PRIORITY APPLN. INFO.:			JP 1990-201192	19900731

AB A reagent kit for sugar structure (composition) determination contains distillable sugar N-acetylating agents (comprising Ac2O, pyridine, MeOH, water). For determination of sugar chain composition of taka-amylase A (a glycoprotein), a sample was treated with F3CCO2H at 100° for 3 h for acid hydrolysis, treated with a distillable reagent containing Ac2O, pyridine, and MeOH at room temperature for 30 min, treated with a reagent containing 2-aminoantipyrine, HOAc, and MeOH, and then treated with a reducing agent containing dimethylamineborane and HOAc at 90° for 15 min.
The excess reagents were distilled to remove and the residue was dissolved in water for HPLC anal. (fluorometer as detector). The enzyme contained N-acetylglucosamine 4.1, mannose 3.0, and galactose 2.2 mol/mol sugar chain. The processes can be performed in a single reaction container and the method is suitable for microanal.

L6 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:469613 CAPLUS
DOCUMENT NUMBER: 137:259501
TITLE: Matrix-assisted laser desorption/ionization mass spectrometry compatible β-elimination of O-linked oligosaccharides
AUTHOR(S): Huang, Yunping; Konse, Tomonori; Mechref, Yehia; Novotny, Milos V.
CORPORATE SOURCE: Department of Chemistry, Indiana University, Bloomington, IN, 47405, USA
SOURCE: Rapid Communications in Mass Spectrometry (2002), 16(12), 1199-1204
CODEN: RCMSEF; ISSN: 0951-4198
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A new β-elimination procedure has been introduced to cleave O-linked oligosaccharides from low- to sub-microgram amts. of glycoproteins prior to anal. by mass spectrometry. Borane-ammonia complex in aqueous ammonia is used as a cleaving solution alternative to the sodium borohydride/sodium hydroxide medium conventionally used in β-elimination. The procedure results in min. sample purification, leading to minimal sample loss and consequently an overall enhancement in sensitivity. It was applied successfully in the anal. of bovine fetuin and submaxillary mucin, as well as to a complex bile-salt-stimulated lipase glycoprotein isolated from human milk.
REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 2 OF 2 MEDLINE on STN
ACCESSION NUMBER: 2002361578 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12112272
TITLE: Matrix-assisted laser desorption/ionization mass spectrometry compatible beta-elimination of O-linked oligosaccharides.
AUTHOR: Huang Yunping; Konse Tomonori; Mechref Yehia; Novotny Milos V
CORPORATE SOURCE: Department of Chemistry, Indiana University, Bloomington, IN 47405, USA.
SOURCE: Rapid communications in mass spectrometry : RCM, (2002) Vol. 16, No. 12, pp. 1199-204.
Journal code: 8802365. ISSN: 0951-4198.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, NON-P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200208
ENTRY DATE: Entered STN: 12 Jul 2002
Last Updated on STN: 13 Aug 2002
Entered Medline: 12 Aug 2002
AB A new beta-elimination procedure has been introduced to cleave O-linked oligosaccharides from low- to sub-microgram amounts of glycoproteins prior to analysis by mass spectrometry. Borane-ammonia complex in aqueous ammonia is used as a cleaving solution alternative to the sodium borohydride/sodium hydroxide medium conventionally used in beta-elimination. The procedure results in minimum sample purification, leading to minimal sample loss and consequently an overall enhancement in sensitivity. It was applied successfully in the analysis of bovine fetuin and submaxillary mucin, as well as to a complex bile-salt-stimulated lipase glycoprotein isolated from human milk.

L13 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:414514 CAPLUS
DOCUMENT NUMBER: 140:407067
TITLE: Method of preparation of oligosaccharides
INVENTOR(S): Huang, Yunping; Konse, Tomonori; Mechref, Yehia S.; Novotny, Milos V.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004096933	A1	20040520	US 2003-664462	20030919
WO 2004045502	A2	20040603	WO 2003-US34088	20031024
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003285006	A1	20040615	AU 2003-285006	20031024

PRIORITY APPLN. INFO.:

US 2002-426861P	P	20021115
US 2003-664462	A	20030919
WO 2003-US34088	W	20031024

AB The invention provides a method of cleaving an O-linked oligosaccharide from a glycoprotein. The method comprises the steps of contacting a composition comprising a glycoprotein, wherein the glycoprotein comprises O-linked oligosaccharides, with a solution comprising a BH3-NH3 complex to form a mixture comprising the glycoprotein and the BH3-NH3 complex, incubating the mixture for a period of time sufficient to cleave the linked oligosaccharides from the glycoprotein, and forming a mixture comprising oligosaccharide alditol products and deglycosylated protein byproducts.

L13 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:469613 CAPLUS
DOCUMENT NUMBER: 137:259501
TITLE: Matrix-assisted laser desorption/ionization mass spectrometry compatible β-elimination of O-linked oligosaccharides
AUTHOR(S): Huang, Yunping; Konse, Tomonori; Mechref, Yehia; Novotny, Milos V.
CORPORATE SOURCE: Department of Chemistry, Indiana University, Bloomington, IN, 47405, USA
SOURCE: Rapid Communications in Mass Spectrometry (2002), 16(12), 1199-1204
CODEN: RCMSEF; ISSN: 0951-4198
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A new β-elimination procedure has been introduced to cleave O-linked oligosaccharides from low- to sub-microgram amts. of glycoproteins prior to anal. by mass spectrometry. Borane-ammonia complex in aqueous ammonia is used as a cleaving solution alternative to the sodium borohydride/sodium

hydroxide medium conventionally used in β-elimination. The procedure results in min. sample purification, leading to minimal sample loss and consequently an overall enhancement in sensitivity. It was applied successfully in the anal. of bovine fetuin and submaxillary mucin, as well as to a complex bile-salt-stimulated lipase glycoprotein isolated from human milk.

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 3 OF 3 MEDLINE on STN
ACCESSION NUMBER: 2002361578 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12112272
TITLE: Matrix-assisted laser desorption/ionization mass spectrometry compatible beta-elimination of O-linked oligosaccharides.
AUTHOR: Huang Yunping; Konse Tomonori; Mechref Yehia; Novotny Milos V
CORPORATE SOURCE: Department of Chemistry, Indiana University, Bloomington, IN 47405, USA.
SOURCE: Rapid communications in mass spectrometry : RCM, (2002) Vol. 16, No. 12, pp. 1199-204.
Journal code: 8802365. ISSN: 0951-4198.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, NON-P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200208
ENTRY DATE: Entered STN: 12 Jul 2002
Last Updated on STN: 13 Aug 2002
Entered Medline: 12 Aug 2002

AB A new beta-elimination procedure has been introduced to cleave O-linked oligosaccharides from low- to sub-microgram amounts of glycoproteins prior to analysis by mass spectrometry. Borane-ammonia complex in aqueous ammonia is used as a cleaving solution alternative to the sodium borohydride/sodium hydroxide medium conventionally used in beta-elimination. The procedure results in minimum sample purification, leading to minimal sample loss and consequently an overall enhancement in sensitivity. It was applied successfully in the analysis of bovine fetuin and submaxillary mucin, as well as to a complex bile-salt-stimulated lipase glycoprotein isolated from human milk.

L14 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2007:443724 CAPLUS
TITLE: Hydrolytic cleavage of ammonia-borane complex for hydrogen production
AUTHOR(S): Mohajeri, Nahid; T-Raissi, Ali; Adebiyi, Olawale
CORPORATE SOURCE: Hydrogen R&D Division, Florida Solar Energy Center, University of Central Florida 1679 Clearlake Rd., Cocoa, FL, 32955, USA
SOURCE: Journal of Power Sources (2007), 167(2), 482-485
CODEN: JPSODZ; ISSN: 0378-7753
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A new process for generating hydrogen via near room temperature hydrolysis of AB
AB complex using small amts. of platinum group metal catalyst has been studied. Using in situ 11B NMR spectroscopy, the overall rate of K2Cl6Pt catalyzed hydrolysis of AB complex was calculated to be third-order. The pre-exponential factor (A) and the activation energy (E a) of Arrhenius equation, ln k = ln A - E a/RT, were determined to be: A = 1.6 + 1011 L mol-1 s-1 and E a = 86.6 kJ mol-1 for temperature range of (25-35 °C). XPS of the residue suggested that the platinum salt was reduced from Pt4+ to Pt0 within the course of the reaction and X-ray diffraction anal. pattern for the residue showed crystallized single-phase boric acid.

L14 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:917717 CAPLUS
DOCUMENT NUMBER: 138:153224
TITLE: Evaluation of a Pseudoephedrine Linker for Asymmetric Alkylations on Solid Phase
AUTHOR(S): Hutchison, Panee C.; Heightman, Tom D.; Procter, David J.
CORPORATE SOURCE: Department of Chemistry, The Joseph Black Building, University of Glasgow, Glasgow, G12 8QQ, UK
SOURCE: Organic Letters (2002), 4(26), 4583-4585
CODEN: ORLEF7; ISSN: 1523-7060
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 138:153224
AB Immobilized pseudoephedrine amides are conveniently prepared by regioselective attachment of pseudoephedrine to Merrifield resin with potassium hydride in THF followed by acylation of the secondary amine with phenylacetyl chloride or propionic or valeric anhydride; the resin-bound pseudoephedrine amides undergo stereoselective alkylation reactions followed by cleavage to give nonracemic primary alcs. and ketones with similar enantiomeric excesses to those produced using the corresponding solution-phase auxiliaries. Cleavage of the resin-bound pseudoephedrine amides with lithium amidotrihydridoborate (prepared by treatment of borane-ammonia complex with LDA) provides nonracemic primary alcs. such as (S)-PhCH2CHMeCH2OH in 22-59% yields and 84-87% ee. Addition of organolithium reagents to resin-bound pseudoephedrine amides followed by addition of diisopropylamine provides nonracemic ketones such as (S)-BuCH2COCHMeCH2Ph in 15-31% yields and 77-90% ee.
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:44732 CAPLUS
DOCUMENT NUMBER: 134:246537
TITLE: Palladium and Raney Nickel Catalyzed Methanolic

TITLE: Cleavage of Stable Borane-Amine Complexes
AUTHOR(S): Couturier, Michel; Tucker, John L.; Andresen, Brian M.; Dube, Pascal; Negri, Joanna T.
CORPORATE SOURCE: Process Research and Development, Pfizer Global Research and Development, Groton, CT, 06340-8013, USA
SOURCE: Organic Letters (2001), 3(3), 465-467
CODEN: ORLEF7; ISSN: 1523-7060
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 134:246537
AB Palladium and Raney nickel were found to catalyze the methanolysis of borane-amine adducts. Hence, strongly complexed amines can now be liberated by simple treatment with Pd/C or Raney Ni in methanol. The method is applicable to primary, secondary, tertiary, and aromatic amines, and the mildness of the reaction conditions allows preservation of otherwise labile functional groups.
REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1976:404862 CAPLUS
DOCUMENT NUMBER: 85:4862
TITLE: Photochemistry of tribenzylborane and its ammonia complex. Heterolytic cleavage of benzyl carbon-boron bond
AUTHOR(S): Vo Van Chung; Inagaki, Kazuhiko; Tokuda, Masao; Itoh, Mitsuomi
CORPORATE SOURCE: Dep. Chem. Process Eng., Hokkaido Univ., Sapporo, Japan
SOURCE: Chemistry Letters (1976), (3), 209-10
CODEN: CMLTAG; ISSN: 0366-7022
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Irradiation of tribenzylborane-ammonia complex in protic solvents produced toluene in a 262° yield. Irradiation of tribenzylborane also produced toluene as a major product. Toluene was formed by a protanation of the benzyl anion which resulted from heterolytic cleavage of the benzyl C-B bond.

L14 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1973:148292 CAPLUS
DOCUMENT NUMBER: 78:148292
TITLE: Polymerization of vinyl chloride with the redox system cerium ammonium nitrate-ammonium triethylborate complex as the initiator
AUTHOR(S): Ulbricht, J.; Seidel, W.
CORPORATE SOURCE: Sekt. Hochpolym., Tech. Hochsch. Chem. "Carl Schorlemmer", Leuna-Merseburg, Ger. Dem. Rep.
SOURCE: Plaste und Kautschuk (1973), 20(1), 6-7
CODEN: PLKAAM; ISSN: 0048-4350
DOCUMENT TYPE: Journal
LANGUAGE: German
AB The dependence of kinetics and d.p. in the polymerization of vinyl chloride [75-01-4] on the concentration of ceric ammonium nitrate [16774-21-3]-ammonia-triethylborane complex (1:1) [1188-10-9] catalyst indicates that at high Ce concentration oxidative cleavage of primary radicals and the polymer chain takes place. The redox reaction is probably preceeded by complex formation by the catalysts. Liberated protons may have an autocatalytic effect, and side reactions of oxidized B compds. are possible.

L14 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1971:483680 CAPLUS

DOCUMENT NUMBER: 75:83680
TITLE: Preparation and properties of the diammoniate of pentaborane(II)
AUTHOR(S): Kodama, G.; Dunning, J. E.; Parry, R. W.
CORPORATE SOURCE: Dep. Chem., Univ. Michigan, Ann Arbor, MI, USA
SOURCE: Journal of the American Chemical Society (1971), 93(14), 3372-7
CODEN: JACSAT; ISSN: 0002-7863
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Pentaborane(11) and NH3, if mixed in a 1.2 molar ratio at -112°, react at low temps. in an ether solvent to form a diammoniate of pentaborane(11), B5H11.2NH3. The diammoniate is an unstable solid at room temperature, decomposing to a viscous liquid The reaction of the diammoniate with HBr in ether at -112° gives [H2B(NH3)2]+Br- and B4H10 quant. Chemical and NMR evidence thus supports the formula [H2B(NH3)2]+[B4H9]-. The nonsym. cleavage pattern; observed in the reactions of B2H6 and B4H10 with NH3, is thus extended to the reaction of B5H11 with NH3. Properties of the B4H9- ion are described; B4H10, the conjugate protic acid of B4H9-, is a weaker protic acid than B5H11.

L14 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1964:490051 CAPLUS
DOCUMENT NUMBER: 61:90051
ORIGINAL REFERENCE NO.: 61:15647b-c
TITLE: Studies of boranes. XIV. Evidence for the nonsymmetrical cleavage of tetraborane by ethers
AUTHOR(S): Schaeffer, Riley; Tebbe, Fred; Phillips, Carl
CORPORATE SOURCE: Indiana Univ., Bloomington
SOURCE: Inorg. Chem. (1964), 3(11), 1475-9
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB cf. ibid. 1638-40; CA 61, 5109d. The 11B N.M.R. (nuclear magnetic resonance) spectra of solns. of tetraborane in tetrahydrofuran indicate that reaction takes place at -53° to produce a material which has the spectral properties of the triborohydride ion. A signal attributable to the triborohydride ion also appears in tetraborane solns. of tetrahydropyran and ethylene glycol dimethyl ether but the material is less stable in the more weakly coordinating bases. The 1st detectable stage of the ether cleavage of tetraborane thus produces materials analogous to the products of the NH3 cleavage reaction which have previously been considered anomalous. A hydride ion from the triborohydride fragment apparently displaces an ether mol. from the (ether)2BH2+ cation to yield the previously observed triborane-7 and borane derivs. Unidentified intermediate species in the NH3 reaction suggest that cleavage of tetraborane to the diammoniate of tetraborane is itself a complex process which takes place by at least 2 steps.

L14 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1963:428092 CAPLUS
DOCUMENT NUMBER: 59:28092
ORIGINAL REFERENCE NO.: 59:5007c-e
TITLE: Some reactions of tetrakis(dimethylamino)diboron
AUTHOR(S): Massey, A. G.; Thompson, N. R.
CORPORATE SOURCE: Univ. Chem. Lab., Cambridge, UK
SOURCE: Journal of Inorganic and Nuclear Chemistry (1963), (25), 175-8
CODEN: JINCAO; ISSN: 0022-1902
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB Thermal decompn, of tetrakis(dimethylamino)diboron was conducted at 200° for 4 days and at 300° for 4, 16, and 24 days with a recovery of B-B bonds of 92, 83, 80, and -%, resp. The decomposition, producing B(NMe2)3 as one product, was not straight-forward since CH4 was obtained in significant yield indicating parallel fission of the C-N bonds. In the liquid product, traces of a compound containing B-H links, in very small yield, were indicated by infrared spectra. A complex reaction of B2(NMe2)4 with O was reported; reaction with NO at 200° was incomplete giving N2O, dimethylaminoboroxole, and tris(dimethylamino) borane; no reaction was noted at room temperature or at 200° with ethylene. Attempted fluorination or chlorination of tetrakis(dimethylamino)diboron using PCl3, SbCl3, IF5, and SnCl4 gave nonvolatile, moisture-sensitive solids and liquids but no volatile compds. When excess of SF5Cl was used BCl3 was produced, Cl and SF4 being isolated as by-products. Little or no exchange occurred between tetrakis(dimethylamino)diboron and ammonia even at room temperature K or Na did not cleave the B-B bond in liquid ammonia at -78°.

L17 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:414514 CAPLUS
DOCUMENT NUMBER: 140:407067
TITLE: Method of preparation of oligosaccharides
INVENTOR(S): Huang, Yunping; Konse, Tomonori; Mechref, Yehia S.; Novotny, Milos V.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004096933	A1	20040520	US 2003-664462	20030919
WO 2004045502	A2	20040603	WO 2003-US34088	20031024
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003285006	A1	20040615	AU 2003-285006	20031024

PRIORITY APPLN. INFO.:

US 2002-426861P	P	20021115
US 2003-664462	A	20030919
WO 2003-US34088	W	20031024

AB The invention provides a method of cleaving an O-linked oligosaccharide from a glycoprotein. The method comprises the steps of contacting a composition comprising a glycoprotein, wherein the glycoprotein comprises O-linked oligosaccharides, with a solution comprising a BH3-NH3 complex to form a mixture comprising the glycoprotein and the BH3-NH3 complex, incubating the mixture for a period of time sufficient to cleave the linked oligosaccharides from the glycoprotein, and forming a mixture comprising oligosaccharide alditol products and deglycosylated protein byproducts.

L17 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:469613 CAPLUS
DOCUMENT NUMBER: 137:259501
TITLE: Matrix-assisted laser desorption/ionization mass spectrometry compatible β-elimination of O-linked oligosaccharides
AUTHOR(S): Huang, Yunping; Konse, Tomonori; Mechref, Yehia; Novotny, Milos V.
CORPORATE SOURCE: Department of Chemistry, Indiana University, Bloomington, IN, 47405, USA
SOURCE: Rapid Communications in Mass Spectrometry (2002), 16(12), 1199-1204
CODEN: RCMSEF; ISSN: 0951-4198
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A new β-elimination procedure has been introduced to cleave O-linked oligosaccharides from low- to sub-microgram amts. of glycoproteins prior to anal. by mass spectrometry. Borane-ammonia complex in aqueous ammonia is used as a cleaving solution alternative to the sodium borohydride/sodium hydroxide medium

conventionally used in β-elimination. The procedure results in min. sample purification, leading to minimal sample loss and consequently an overall enhancement in sensitivity. It was applied successfully in the anal. of bovine fetuin and submaxillary mucin, as well as to a complex bile-salt-stimulated lipase glycoprotein isolated from human milk.

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 3 OF 3 MEDLINE on STN
ACCESSION NUMBER: 2002361578 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12112272
TITLE: Matrix-assisted laser desorption/ionization mass spectrometry compatible beta-elimination of O-linked oligosaccharides.
AUTHOR: Huang Yunping; Konse Tomonori; Mechref Yehia; Novotny Milos V
CORPORATE SOURCE: Department of Chemistry, Indiana University, Bloomington, IN 47405, USA.
SOURCE: Rapid communications in mass spectrometry : RCM, (2002) Vol. 16, No. 12, pp. 1199-204.
Journal code: 8802365. ISSN: 0951-4198.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, NON-P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200208
ENTRY DATE: Entered STN: 12 Jul 2002
Last Updated on STN: 13 Aug 2002
Entered Medline: 12 Aug 2002

AB A new beta-elimination procedure has been introduced to cleave O-linked oligosaccharides from low- to sub-microgram amounts of glycoproteins prior to analysis by mass spectrometry. Borane-ammonia complex in aqueous ammonia is used as a cleaving solution alternative to the sodium borohydride/sodium hydroxide medium conventionally used in beta-elimination. The procedure results in minimum sample purification, leading to minimal sample loss and consequently an overall enhancement in sensitivity. It was applied successfully in the analysis of bovine fetuin and submaxillary mucin, as well as to a complex bile-salt-stimulated lipase glycoprotein isolated from human milk.

L22 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:469613 CAPLUS
DOCUMENT NUMBER: 137:259501
TITLE: Matrix-assisted laser desorption/ionization mass spectrometry compatible β-elimination of O-linked oligosaccharides
AUTHOR(S): Huang, Yunping; Konse, Tomonori; Mechref, Yehia; Novotny, Milos V.
CORPORATE SOURCE: Department of Chemistry, Indiana University, Bloomington, IN, 47405, USA
SOURCE: Rapid Communications in Mass Spectrometry (2002), 16(12), 1199-1204
CODEN: RCMSEF; ISSN: 0951-4198
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A new β-elimination procedure has been introduced to cleave O-linked oligosaccharides from low- to sub-microgram amts. of glycoproteins prior to anal. by mass spectrometry. Borane-ammonia complex in aqueous ammonia is used as a cleaving solution alternative to the sodium borohydride/sodium hydroxide medium conventionally used in β-elimination. The procedure results in min. sample purification, leading to minimal sample loss and consequently an overall enhancement in sensitivity. It was applied successfully in the anal. of bovine fetuin and submaxillary mucin, as well as to a complex bile-salt-stimulated lipase glycoprotein isolated from human milk.
REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 2 OF 2 MEDLINE on STN
ACCESSION NUMBER: 2002361578 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12112272
TITLE: Matrix-assisted laser desorption/ionization mass spectrometry compatible beta-elimination of O-linked oligosaccharides.
AUTHOR: Huang Yunping; Konse Tomonori; Mechref Yehia; Novotny Milos V
CORPORATE SOURCE: Department of Chemistry, Indiana University, Bloomington, IN 47405, USA.
SOURCE: Rapid communications in mass spectrometry : RCM, (2002) Vol. 16, No. 12, pp. 1199-204.
Journal code: 8802365. ISSN: 0951-4198.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, NON-P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200208
ENTRY DATE: Entered STN: 12 Jul 2002
Last Updated on STN: 13 Aug 2002
Entered Medline: 12 Aug 2002
AB A new beta-elimination procedure has been introduced to cleave O-linked oligosaccharides from low- to sub-microgram amounts of glycoproteins prior to analysis by mass spectrometry. Borane-ammonia complex in aqueous ammonia is used as a cleaving solution alternative to the sodium borohydride/sodium hydroxide medium conventionally used in beta-elimination. The procedure results in minimum sample purification, leading to minimal sample loss and consequently an overall enhancement in sensitivity. It was applied successfully in the analysis of bovine fetuin and submaxillary mucin, as well as to a complex bile-salt-stimulated lipase glycoprotein isolated from human milk.

L25 ANSWER 1 OF 6 MEDLINE on STN
ACCESSION NUMBER: 1999288200 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10334849
TITLE: Core-branching pattern and sequence analysis of mannitol-terminating oligosaccharides by neoglycolipid technology.
AUTHOR: Chai W; Yuen C T; Feizi T; Lawson A M
CORPORATE SOURCE: Glycosciences Laboratory, Imperial College School of Medicine, Northwick Park Hospital, Watford Road, Harrow, Middlesex, HA1 3UJ, United Kingdom.. w.chai@ic.ac.uk
SOURCE: Analytical biochemistry, (1999 Jun 1) Vol. 270, No. 2, pp. 314-22.
Journal code: 0370535. ISSN: 0003-2697.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199907
ENTRY DATE: Entered STN: 15 Jul 1999
Last Updated on STN: 15 Jul 1999
Entered Medline: 6 Jul 1999

AB The occurrence of mannitol-terminating oligosaccharides (2-substituted or 2,6-disubstituted) among the O-glycans released by alkaline borohydride treatment from glycoproteins of the nervous system has prompted the development of a microscale method to analyze the core-branching pattern and sequence by the neoglycolipid (NGL) technology, analogous to a method previously described for GalNAcol-terminating oligosaccharides (M. S. Stoll, E. F. Hounsell, A. M. Lawson, W. Chai, and T. Feizi, Eur. J. Biochem. 189, 499-507, 1990). The approach involves the selective cleavage at the core mannitol by mild periodate treatment and analysis of the reaction products as NGLs by in situ TLC/liquid secondary ion mass spectrometry. Oxidation conditions have been optimized using as reference compounds 2-, 3-, 4-, or 6-monosubstituted mannobi-itols, 3,6-disubstituted mannitol-terminating pentasaccharides, and 2-mono- and 2,6-disubstituted mannitol-terminating neutral and sialylated oligosaccharides isolated from brain glycopeptides. When a 2:1 molar ratio of periodate to alditol is used, the core mannitol is cleaved at the C3-C4 threo-diol bond and in the absence of a threo-diol cleavage occurs to a lesser extent at erythro-diols. Saccharide ring diols are not cleaved under these conditions, and it is also shown that the side chain of sialic acid on the oligosaccharide is largely unaffected. Substituents at 2- and 6-positions of the core mannitol can be identified, and the method is applicable to neutral and sialylated oligosaccharide alditols. Typically, the starting material is 5 nmol of oligosaccharide and 0.5-1 nmol of derivatives is applied for analysis. By this strategy, the core-branching pattern and position of sialic acid of two branched monosialylated mannitol-terminating oligosaccharide isomers have been determined.

L25 ANSWER 2 OF 6 MEDLINE on STN
ACCESSION NUMBER: 93185887 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8444322
TITLE: Structural features of carbohydrate chains in human salivary mucins.
AUTHOR: Slomiany B L; Murty V L; Slomiany A
CORPORATE SOURCE: Research Center, New Jersey Dental School, University of Medicine and Dentistry of New Jersey, Newark 07103-2400.
SOURCE: The International journal of biochemistry, (1993 Feb) Vol. 25, No. 2, pp. 259-65.
Journal code: 0250365. ISSN: 0020-711X.

PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199304
ENTRY DATE: Entered STN: 16 Apr 1993
Last Updated on STN: 3 Feb 1997
Entered Medline: 5 Apr 1993

AB 1. The structure of carbohydrate chains in the low and high molecular weight mucus glycoprotein forms from submandibular-sublingual saliva of individuals with blood group B was investigated. 2. Alkaline borohydride reductive cleavage of the glycoproteins yielded in each case a population of neutral (55%) and acidic (45%) oligosaccharide alditols ranging in size from 3 to 16 sugar units. 3. The predominant neutral oligosaccharides in both glycoprotein forms consisted of 16 and 15 sugar units arranged in triantennary fashion, and carried blood group B and I antigenic determinants. 4. Three of the oligosaccharides in each glycoprotein contained sialic acid and ranged in size from 3 to 12 sugar units. In two oligosaccharides sialic acid was linked to C3 of galactose and in one to C6 of N-acetylgalactosamine. The sulfated oligosaccharide in both glycoproteins was identified as a pentasaccharide with the sulfate ester group at C6 of N-acetylglucosamine. 5. The results demonstrate that contrary to the earlier view the low and high molecular weight mucus glycoprotein forms of human saliva contain identical carbohydrate chains.

L25 ANSWER 3 OF 6 MEDLINE on STN
ACCESSION NUMBER: 88059094 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2890643
TITLE: Structural determination of the oligosaccharide side chains from a glycoprotein isolated from the mucus of the coral Acropora formosa.
AUTHOR: Meikle P; Richards G N; Yellowlees D
CORPORATE SOURCE: Department of Chemistry and Biochemistry, James Cook University of North Queensland, Townsville, Australia.
SOURCE: The Journal of biological chemistry, (1987 Dec 15) Vol. 262, No. 35, pp. 16941-7.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198801
ENTRY DATE: Entered STN: 5 Mar 1990
Last Updated on STN: 6 Feb 1995
Entered Medline: 21 Jan 1988

AB An extracellular mucous glycoprotein has been isolated from the hard coral Acropora formosa. The glycoprotein contains sulfated oligosaccharide side chains attached through O-glycosidic linkages to serine and threonine, the principal amino acids (77%) in the polypeptide. The oligosaccharide side chains consist of D-arabinose, D-mannose, and N-acetyl-D-glucosamine with smaller amounts of D-galactose, L-fucose, and N-acetyl-D-galactosamine, but no sialic or uronic acids. Alkaline borohydride reductive cleavage resulted in a mixture of oligosaccharide alditols. Six oligosaccharides were purified by high performance liquid chromatography. The structures of these oligosaccharides, which do not resemble those of any other glycoprotein so far examined, were determined by a combination of gas chromatography/mass spectrometry analysis of methylation products and NMR spectroscopy. All oligosaccharides contain a reducing terminal mannitol residue with N-acetylglucosamine linked to carbon 2, 4, or 6 of the mannitol. There is no evidence for linkage of N-acetylglucosamine to

any other glycoses in the glycoprotein. Galactose was detected in two oligosaccharides linked to the 4-position of mannitol. Arabinose (Ara) was found in only one oligosaccharide. This was probably due to hydrolysis of the labile arabino-furanoside linkages. Evidence is presented which indicates the arabinose occurs primarily at the terminal position of oligosaccharide side chains. The structures of the oligosaccharides isolated from the glycoprotein were: (Formula: see text).

L25 ANSWER 4 OF 6 MEDLINE on STN
ACCESSION NUMBER: 86111884 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3944123
TITLE: Structure of sialyloligosaccharides isolated from bonnet monkey (Macaca radiata) cervical mucus glycoproteins exhibiting multiple blood group activities.
AUTHOR: Nasir-Ud-Din; Jeanloz R W; Lamblin G; Roussel P; van Halbeek H; Mutsaers J H; Vliegenthart J F
CONTRACT NUMBER: AM-03564 (NIADDK)
HD-12431 (NICHD)
SOURCE: The Journal of biological chemistry, (1986 Feb 15) Vol. 261, No. 5, pp. 1992-7.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198603
ENTRY DATE: Entered STN: 21 Mar 1990
Last Updated on STN: 3 Feb 1997
Entered Medline: 21 Mar 1986

AB Mucin glycoproteins purified from cervical epithelial secretion of the bonnet monkey (Macaca radiata) exhibit multiple blood group activities. Alkaline borohydride reductive cleavage resulted in a mixture of neutral and acidic oligosaccharide-alditols. By high-performance liquid chromatography, seven oligosaccharides (A-4-1 to A-4-7) have been purified from the monosialyloligosaccharide fraction (A-4). Based on the results of 500-MHz 1H NMR spectroscopy, in conjunction with sugar analysis and immunological assays, we propose the following structures for these oligosaccharides. (formula: see text) These structures imply that either the A, B, or H determinant may be found in combination with the Cad/Sda determinant; the oligosaccharides identified, together, account for the blood group activities exhibited by the cervical mucus.

L25 ANSWER 5 OF 6 MEDLINE on STN
ACCESSION NUMBER: 85027245 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6593222
TITLE: Structure of tumor-associated carbohydrate antigen Ca 19-9 on human seminal-plasma glycoproteins from healthy donors.
AUTHOR: Hanisch F G; Uhlenbruck G; Dienst C
SOURCE: European journal of biochemistry / FEBS, (1984 Nov 2) Vol. 144, No. 3, pp. 467-73.
Journal code: 0107600. ISSN: 0014-2956.
PUB. COUNTRY: GERMANY, WEST: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198412
ENTRY DATE: Entered STN: 20 Mar 1990
Last Updated on STN: 20 Mar 1990
Entered Medline: 20 Dec 1984

AB The monoclonal antibody-defined, tumor-associated antigen Ca 19-9, chemically identical with the sialylated Lewisa-carbohydrate determinant of a monoganglioside and a mucin, was demonstrated by radioimmunoassay to be present in large amounts as component of fucose-rich sialoglycoproteins, which had been extracted from human seminal plasma of healthy donors. The carbohydrate antigen of these glycoproteins (m greater than 205 kDa and m 115 kDa), which are presumably secreted by the prostatic gland, was absent in seminal plasma from blood-group-Lewis-negative men. The Ca 19-9 active sialyl-oligosaccharide was cleaved from the proteins by mild alkaline borohydride treatment and was shown to chromatograph on gradient elution from DEAE-Sephadex with the fraction of monosialylated saccharide alditols (MS-SP). The asialo derivative of the major saccharide alditol in this fraction was composed of L-fucose, D-galactose, N-acetyl-D-glucosamine and N-acetyl-D-galactosaminitol in the molar proportions 1:2:1:1 and chromatographed on Bio-Gel P2 according to approximately seven hexose units. A methylation analysis of the sialylated saccharide alditol in fraction MS-SP, which had been purified by high-pressure liquid chromatography, revealed the presence of terminal, non-reducing L-fucose, 3-O-substituted D-galactose, 3,4 di-O-substituted N-acetyl-D-glucosamine and 3-O-substituted N-acetyl-D-galactosaminitol. The presented data and the fragmentation pattern obtained on direct probe EI and FAB+ mass spectrometry of the permethylated asialo derivative are in accordance with the structure of a sialylated pentasaccharide alditol (formula; see text).

L25 ANSWER 6 OF 6 MEDLINE on STN
ACCESSION NUMBER: 82050545 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7297558
TITLE: Structure determination of oligosaccharides isolated from A+, H+ and A-H- hog-submaxillary-gland mucin glycoproteins, by 360-MHz 1H-NMR spectroscopy, permethylation analysis and mass spectrometry.
AUTHOR: Van Halbeek H; Dorland L; Haverkamp J; Veldink G A; Vliegenthart J F; Fournet B; Ricart G; Montreuil J; Gathmann W D; Aminoff D
CONTRACT NUMBER: AM 17881 (NIADDK)
SOURCE: European journal of biochemistry / FEBS, (1981 Sep 1) Vol. 118, No. 3, pp. 487-95.
Journal code: 0107600. ISSN: 0014-2956.
PUB. COUNTRY: GERMANY, WEST: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198201
ENTRY DATE: Entered STN: 16 Mar 1990
Last Updated on STN: 3 Feb 1997
Entered Medline: 20 Jan 1982

AB Alkaline borohydride reductive cleavage (beta-elimination) of hog submaxillary glycoproteins from three immunologically determined phenotypes, viz. A+, H+ and A-H-, resulted in the release of a series of neutral and acidic oligosaccharide-alditols. 360-MHz 1H-NMR spectroscopy in combination with methylation analysis and mass spectrometry were used for reinvestigation of the structures of these oligosaccharide-alditols. All are partial structures representing the possible complete and biosynthetically incomplete stages of the chain of a pentasaccharide-N-acetylgalactosaminitol, present in the glycoprotein with blood-group-A activity: (formula: see text) In this way, a prolonged argument about the occurrence of a NeuGc(alpha 2 leads to 6) Gal moiety in these carbohydrate chains, suggested by Aminoff et al. [Aminoff, D., Baig,

M. M. and Gathmann, W. D. (1979) J. Biol. Chemical 254, 1788-1793 and 8909-8913] has been brought to a definite end. In the investigated oligosaccharide-alditols N-glycoloylneuraminic acid (NeuGc) is in no case attached to galactose (Gal), but, if present, it is (alpha 2 leads to 6)-linked to N-acetylgalactosaminitol (GalNAc-ol).

L27 ANSWER 1 OF 3 MEDLINE on STN
ACCESSION NUMBER: 83283515 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6882773
TITLE: Terminal alpha (1 leads to 4)-linked N-acetylglucosamine: a characteristic constituent of duodenal-gland mucous glycoproteins in rat and pig. A high-resolution 1H-NMR study.
AUTHOR: Van Halbeek H; Gerwig G J; Vliegenthart J F; Smits H L; Van Kerkhof P J; Kramer M F
SOURCE: Biochimica et biophysica acta, (1983 Sep 14) Vol. 747, No. 1-2, pp. 107-16.
Journal code: 0217513. ISSN: 0006-3002.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: (COMPARATIVE STUDY)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198310
ENTRY DATE: Entered STN: 19 Mar 1990
Last Updated on STN: 19 Mar 1990
Entered Medline: 28 Oct 1983

AB The structure of the carbohydrate chains of mucous glycoproteins from the gastro-intestinal tract was examined for species- and tissue-specificity. To this purpose, oligosaccharides were released from purified glycoprotein preparations of rat and pig gastric, duodenal-gland and small-intestinal mucus, by alkaline borohydride reductive cleavage. Based on the results of 500-MHz 1H-NMR spectroscopy and of sugar analysis of the total oligosaccharide fractions, terminal GlcNAc, alpha (1 leads to 4)-linked to galactose, appears to be a characteristic constituent of duodenal-gland oligosaccharides. Similarly, NeuAc in alpha (2 leads to 3)-linkage to galactose turns out to be a typical constituent of small-intestinal mucous glycoproteins. In general, glycoproteins from gastric mucus possess larger and more-branched carbohydrate chains than those from duodenal-gland and small-intestinal mucus. Comparing rat and pig, oligosaccharide structures for corresponding tissues are less complex for the former. After fractionation, the rat duodenal-gland oligosaccharides could be characterized by application of 1H-NMR spectroscopy as being branched tetra- up to hexa-saccharide chains, all sharing the italicized trisaccharide element. The chains exhibit microheterogeneity as to the termination by fucose in alpha (1 leads to 2)- or by GlcNAc in alpha (1 leads to 4)-linkage to galactose. The following structures can be proposed for the most abundant rat duodenal-gland oligosaccharides: (table; see text).

L27 ANSWER 2 OF 3 MEDLINE on STN
ACCESSION NUMBER: 83085524 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6897425
TITLE: High molecular weight glycoproteins released by expanding, pre-attachment sheep, pig and cow blastocysts in culture.
AUTHOR: Masters R A; Roberts R M; Lewis G S; Thatcher W W; Bazer F W; Godkin J D
CONTRACT NUMBER: 616-15-162 (NICHD)
HD10346
SOURCE: Journal of reproduction and fertility, (1982 Nov) Vol. 66, No. 2, pp. 571-83.
Journal code: 0376367. ISSN: 0022-4251.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, NON-P.H.S.)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English

FILE SEGMENT: Priority Journals
ENTRY MONTH: 198302
ENTRY DATE: Entered STN: 17 Mar 1990
Last Updated on STN: 3 Feb 1997
Entered Medline: 14 Feb 1983

AB Blastocysts isolated from sheep (Day 14--16), pigs (Day 16) and cows (Day 19) during the pre-attachment elongation phase were cultured for up to 30 h in a modified MEM medium in the presence of radioactive amino acids (L-[14C]leucine or L-[35S]methionine) to label protein and D-[3H]glucosamine to label complex saccharides. All the blastocysts released considerable quantities of non-dialysable radioactive material into the medium at an approximately linear rate over the course of the incubation. Ion-exchange chromatography on DEAE cellulose at pH 8.2 revealed that the major glucosamine-labelled product in the medium was a non-sulphated glycoprotein which eluted early in the salt gradient. None of the blastocysts produced any detectable glycosaminoglycan-like materials such as hyaluronic acid. The glycoprotein was purified by ion-exchange and gel filtration chromatography and had a molecular weight of greater than 660 000. Up to 100 micrograms of this material could be isolated from incubations of 2 sheep conceptuses. It was relatively resistant to protease hydrolysis and consisted of approximately 50% carbohydrate and 50% protein. The main monosaccharide constituents, as revealed by gas-liquid chromatography, were galactose and N-acetylglucosamine plus some mannose and fucose. No sialic acid was present. The linkages between the carbohydrate chains and the peptide appeared to be resistant to alkaline borohydride cleavage and were probably, therefore, N-glycosidic.

L27 ANSWER 3 OF 3 MEDLINE on STN
ACCESSION NUMBER: 82082517 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6458817
TITLE: Carbohydrate modifications of the high mobility group proteins.
AUTHOR: Reeves R; Chang D; Chung S C
CONTRACT NUMBER: 1-R01-GM26702 (NIGMS)
SOURCE: Proceedings of the National Academy of Sciences of the United States of America, (1981 Nov) Vol. 78, No. 11, pp. 6704-8.
Journal code: 7505876. ISSN: 0027-8424.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198202
ENTRY DATE: Entered STN: 16 Mar 1990
Last Updated on STN: 3 Feb 1997
Entered Medline: 12 Feb 1982

AB This paper reports the results of numerous biochemical analyses which indicate that the "high mobility group" proteins (HMGs) of mouse and bovine cells are bona fide glycoproteins and can, in addition, be modified by poly(ADP-ribose) addition in vitro. The sugars N-acetylglucosamine, mannose, galactose, glucose, fucose, and one unknown sugar (possibly xylose) have been identified in purified preparations of HMGs 14 and 17. Furthermore, the fucose-specific lectin Ulex europeus agglutinin I bound both to the isolated HMGs and to monomer nucleosomes containing HMGs released from "active chromatin" by micrococcal nuclease digestion. Selective alkaline borohydride reductive cleavages of the HMGs suggested that the oligosaccharide prosthetic groups are primarily bound to these proteins by N-glycosidic linkages. The unexpected finding that the HMGs contain covalently bound complex carbohydrate moieties allows for a potentially great amount of variability and specificity in these proteins that may have

important biological implications.

the chitobiosyl core.

L28 ANSWER 27 OF 43 MEDLINE on STN
ACCESSION NUMBER: 84279009 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6380410
TITLE: Reductive cleavage of Xaa-proline peptide bonds by mild alkaline borohydride treatment employed to release O-glycosidically linked carbohydrate units of glycoproteins.
AUTHOR: Shimamura M; Inoue Y; Inoue S
SOURCE: Archives of biochemistry and biophysics, (1984 Aug 1) Vol. 232, No. 2, pp. 699-706.
Journal code: 0372430. ISSN: 0003-9861.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198409
ENTRY DATE: Entered STN: 20 Mar 1990
Last Updated on STN: 20 Mar 1990
Entered Medline: 4 Sep 1984

AB During the deglycosylation reaction of fish egg polysialoglycoproteins under the conditions of 1 M NaBH4 in 0.1 M NaOH at 37 degrees C for 48 h, a marked loss of the glycine content has been encountered, besides the serine and threonine residues to which the carbohydrate units are linked. The chemical basis behind this phenomenon has been elucidated by amino acid analysis first of the major glycopeptides (carbohydrate-(O)Thr-Gly-Pro-Ser) derived from desialylated polysialoglycoproteins and subsequently six proline-containing peptides before and after treatment under similar conditions. It has thus been established that -Xaa-Pro- sequences are remarkably susceptible to reductive cleavage under such mild aqueous conditions. In view of the finding that the reductive cleavage of insulin B-chain, which contains a single proline residue adjacent and C-terminal to a threonine residue, led to about 80% loss of the threonine residue, deglycosylation with alkaline borohydride reagents warrants a special comment. The decreased amounts of serine or threonine residues cannot be related simply to the degree of glycosylation of these residues. The above results are therefore discussed in the relation to other work.

L28 ANSWER 22 OF 43 MEDLINE on STN
ACCESSION NUMBER: 88058978 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2445744
TITLE: Presence of an O-glycosidically linked hexasaccharide in fetuin.
AUTHOR: Edge A S; Spiro R G
CORPORATE SOURCE: Department of Biological Chemistry, Harvard Medical School, Boston, Massachusetts.
CONTRACT NUMBER: AM 17325 (NIADDK)
SOURCE: The Journal of biological chemistry, (1987 Nov 25) Vol. 262, No. 33, pp. 16135-41.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198712
ENTRY DATE: Entered STN: 5 Mar 1990
Last Updated on STN: 3 Feb 1997
Entered Medline: 29 Dec 1987

AB Examination by gel filtration, thin layer and anion exchange chromatography of the O-linked carbohydrate units released from fetuin by alkaline borohydride treatment indicated the presence in this glycoprotein of an acidic glucosamine-containing hexasaccharide in addition to the previously described tetra- and trisaccharides. The structure of the hexasaccharide was determined to be NeuAc alpha 2----3Gal beta 1----3[NeuAc alpha 2----3Gal beta 1----4GlNAc beta 1----6]GalNAc, on the basis of exoglycosidase digestion, periodate oxidation, and methylation analysis as well as hydrazine-nitrous acid fragmentation. The latter procedure when carried out on the reduced asialohexasaccharide yielded Gal----2-deoxygalactitol and Gal----anhydromannose which were shown to be derived, respectively, from Gal----N-acetylgalactosaminitol and Gal----GlcNAc sequences. Reductive amination of the Gal----anhydromannose disaccharide with [14C] methylamine permitted identification of its linkage as 1----4. While Diplococcus pneumoniae endo-alpha-DN-acetylgalactosaminidase acting on asialofetuin released the sialic acid-free tetra- and trisaccharides (Gal beta 1----3GalNAc), this enzyme did not cleave the peptide attachment of the asialohexasaccharide (Gal beta 1----3 [Gal beta 1----4GlcNAc beta 1----6] GalNAc). The number of O-linked hexa-, tetra-, and trisaccharides per fetuin molecule was determined to be 0.2, 0.7, and 2.1, respectively, on the basis of galactosaminitol analyses. The absence of O-linked N-acetylglucosamine-containing tetra- or pentasaccharides in fetuin suggest that the attachment of this sugar is a rate-limiting step; furthermore, the limited occurrence of the hexasaccharide may indicate that the addition of sialic acid to Gal beta 1----3GalNAc to form the NeuAc alpha 2----3Gal linkage precludes action of the GlcNAc transferase to form the branch point on the GalNAc residue.

L28 ANSWER 23 OF 43 MEDLINE on STN
ACCESSION NUMBER: 87242549 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3593760
TITLE: Isolation of a novel O-linked, sulfated polysaccharide of high molecular weight from an ovarian cyst glycoprotein having blood group "A" activity.
AUTHOR: Wu S S; Lee A C; Bush C A
SOURCE: Biochimica et biophysica acta, (1987 Jun 22) Vol. 924, No. 3, pp. 420-31.
Journal code: 0217513. ISSN: 0006-3002.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

(RESEARCH SUPPORT, U.S. GOV'T, NON-P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198708
ENTRY DATE: Entered STN: 5 Mar 1990
Last Updated on STN: 5 Mar 1990
Entered Medline: 5 Aug 1987

AB Treatment of a blood group A-active ovarian cyst mucin glycoprotein with alkaline borohydride under conditions expected to cleave O-glycosidic linkages between carbohydrate and peptide releases a sulfated polysaccharide of average molecular weight 20,000. Its peptide and mannose content is less than 1%, and carbohydrate analysis gives Fuc/GalNAc/Gal/GlcNAc in the ratio of 1:1:2.2:2.2. Galactosaminitol is recovered at the level of one residue per 112-residue average polysaccharide chain. The 13C- and 1H-NMR spectra show that the polysaccharide has side chains whose non-reducing terminals have the blood group A structure on a type 1 chain: (Formula: see text). Methylation analysis confirms the presence of these blood group A type 1 sidechains as well as 4-substituted GlcNAc, 3-substituted galactose and 3,6-substituted galactose branch points. Periodate oxidation removes all the fucose and GalNAc from the non-reducing terminal but leaves intact the backbone composed of beta-linked Gal and GlcNAc, as would be expected for a polylactosamine. Although the native polysaccharide is resistant to endo-beta-galactosidase digestion, the product of periodate degradation is partially digested, giving a 30% yield of a trisaccharide shown by 1H-NMR spectroscopy to be: Gal(beta 1----3)GlcNAc(beta 1----3)Gal We conclude that this is a high molecular weight sulfated polysaccharide which is related to the asparagine-linked polylactosamine chains of cell surface glycoproteins which have been implicated in cell differentiation. However, the blood group A polysaccharide from the ovarian cyst mucin is unique in several respects. It is linked to the protein by an O-glycosidic bond rather than the N-asparagine linkage of the previously known polylactosamines which have a trimannosyl core, and its blood group A side chains are on a type 1 core rather than type 2 which is found on other polylactosamines.

L28 ANSWER 24 OF 43 MEDLINE on STN
ACCESSION NUMBER: 87159357 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3829043
TITLE: Structure of acidic oligosaccharides isolated from pronase-treated glycoprotein of bonnet-monkey (Macaca radiata) cervical mucus.
AUTHOR: Nasir-ud-Din
SOURCE: Carbohydrate research, (1987 Jan 15) Vol. 159, No. 1, pp. 95-107.
Journal code: 0043535. ISSN: 0008-6215.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198705
ENTRY DATE: Entered STN: 3 Mar 1990
Last Updated on STN: 3 Mar 1990
Entered Medline: 15 May 1987

AB The major glycoprotein component of cervical mucus of bonnet monkey was treated with Pronase, and the enzyme-resistant glycoprotein purified by gel filtration on Sepharose 4B followed by DEAE-cellulose chromatography. Alkaline-borohydride cleavage of the carbohydrate chains gave a mixture of neutral and acidic oligosaccharides. Seven acidic oligosaccharides were characterized by chemical and enzymic procedures; their proposed structures are: alpha NeuAc(2----3)-[beta GalNAc(1----4)]beta Gal(1----4)GlcNAc(1----6)[alpha Fuc(1----2)beta Gal(1----3)]GalNAc-ol; alpha Fuc(1----2)beta Gal(1----3)/6)[alpha NeuAc(2----3)beta Gal(1----4)GlcNAc(1----3)/6)]GalNAc-

ol; alpha GalNAc(1----3)beta Gal(1----3)[alpha NeuAc(2----3)beta Gal(1----4)GlcNAc(1----6)]GalNAc-ol; beta GlcNAc(1----3)[alpha Fuc(1----2)]beta Gal(1----3)[alpha NeuAc(2----6)]GalNAc-ol; beta Gal(1----3)-[alpha NeuAc(2----6)]GalNAc-ol; alpha NeuAc(2----6)GalNAc-ol; and beta Gal3SO3(1----4) GlcNAc(1----6)[alpha Fuc(1----2)beta Gal(1----3)]GalNAc-ol.

L28 ANSWER 25 OF 43 MEDLINE on STN
ACCESSION NUMBER: 86140576 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3949914
TITLE: Simultaneous determination of N-acetylglucosamine, N-acetylgalactosamine, N-acetylglucosaminitol and N-acetylgalactosaminitol by gas-liquid chromatography.
AUTHOR: Mawhinney T P
CONTRACT NUMBER: HL-32026 (NHLBI)
SOURCE: Journal of chromatography, (1986 Jan 3) Vol. 351, No. 1, pp. 91-102.
Journal code: 0427043. ISSN: 0021-9673.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198604
ENTRY DATE: Entered STN: 21 Mar 1990
Last Updated on STN: 3 Feb 1997
Entered Medline: 21 Apr 1986

AB A gas-liquid chromatographic procedure is described which will concomitantly separate and quantitate N-acetylglucosamine, N-acetylgalactosamine, N-acetylglucosaminitol and N-acetylgalactosaminitol in a single analytical run. The hexosamines, as their O-methyloximes, and the hexosaminitols can be separated as either their per-O-acetylated or per-O-trimethylsilylated derivatives. This method is particularly useful with samples that possess both N-acetylhexosaminitols and N-acetylhexosamines as are seen with N-linked oligosaccharides that are cleaved from glycoproteins by alkaline borohydride treatment. This procedure demonstrates a range of acceptable linearity of 1-1000 nmoles for each type of amino sugar.

L28 ANSWER 26 OF 43 MEDLINE on STN
ACCESSION NUMBER: 85027999 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6208065
TITLE: The effect of mild alkali and alkaline borohydride on the carbohydrate and peptide moieties of fetuin.
AUTHOR: Hounsell E F; Pickering N J; Stoll M S; Lawson A M; Feizi T
SOURCE: Biochemical Society transactions, (1984 Aug) Vol. 12, No. 4, pp. 607-10.
Journal code: 7506897. ISSN: 0300-5127.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198411
ENTRY DATE: Entered STN: 20 Mar 1990
Last Updated on STN: 20 Mar 1990
Entered Medline: 30 Nov 1984

AB In the light of recent reports, based on radioactive labelling studies, that substantial amounts of N-linked oligosaccharides are released from protein under the mild-alkaline borohydride degradation conditions that are usually used to release O-linked oligosaccharides, we have investigated by chemical methods the effects of alkali alone and alkaline borohydride on the carbohydrate and peptide moieties of fetuin. The chromatographic profiles

on Sephadex G50 columns, of the hexose- and ninhydrin-positive components of the native and Pronase-treated glycoprotein have been compared with those obtained after treatment with mild alkali alone (0.05 M-NaOH, 50 degrees C, 16 h) or mild-alkaline borohydride (0.05 M-NaOH containing 1 M-NaBH4, 50 degrees C, 16 h). Composition and methylation analyses have been performed on carbohydrate-containing peaks and the following conclusions were drawn: mild alkali treatment alone liberated a minor hexose- and ninhydrin-positive component and mild-alkaline borohydride treatment gave a major hexose-containing peak: both of these co-chromatographed on a Sephadex G50 column with Pronase glycopeptides. The polypeptide backbone was totally broken down by the alkaline borohydride treatment. The presence of released N-linked chains after alkaline borohydride treatment was confirmed. However, from the carbohydrate composition it was calculated that no more than 10-20% of the N-linked chains were released from protein. The results of methylation analysis have raised the possibility that this release is in part due to cleavage of the chitobiosyl core.

L28 ANSWER 27 OF 43 MEDLINE on STN
ACCESSION NUMBER: 84279009 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6380410
TITLE: Reductive cleavage of Xaa-proline peptide bonds by mild alkaline borohydride treatment employed to release O-glycosidically linked carbohydrate units of glycoproteins.
AUTHOR: Shimamura M; Inoue Y; Inoue S
SOURCE: Archives of biochemistry and biophysics, (1984 Aug 1) Vol. 232, No. 2, pp. 699-706.
Journal code: 0372430. ISSN: 0003-9861.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198409
ENTRY DATE: Entered STN: 20 Mar 1990
Last Updated on STN: 20 Mar 1990
Entered Medline: 4 Sep 1984

AB During the deglycosylation reaction of fish egg polysialoglycoproteins under the conditions of 1 M NaBH4 in 0.1 M NaOH at 37 degrees C for 48 h, a marked loss of the glycine content has been encountered, besides the serine and threonine residues to which the carbohydrate units are linked. The chemical basis behind this phenomenon has been elucidated by amino acid analysis first of the major glycopeptides (carbohydrate-(O)Thr-Gly-Pro-Ser) derived from desialylated polysialoglycoproteins and subsequently six proline-containing peptides before and after treatment under similar conditions. It has thus been established that -Xaa-Pro- sequences are remarkably susceptible to reductive cleavage under such mild aqueous conditions. In view of the finding that the reductive cleavage of insulin B-chain, which contains a single proline residue adjacent and C-terminal to a threonine residue, led to about 80% loss of the threonine residue, deglycosylation with alkaline borohydride reagents warrants a special comment. The decreased amounts of serine or threonine residues cannot be related simply to the degree of glycosylation of these residues. The above results are therefore discussed in the relation to other work.

L28 ANSWER 28 OF 43 MEDLINE on STN
ACCESSION NUMBER: 84179040 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6231949
TITLE: Mucin biosynthesis: characterization of rabbit small intestinal UDP-N-acetylglucosamine:galactose

beta-3-N-acetylgalactosaminide (N-acetylglucosamine----N-acetylgalactosamine) beta-6-N-acetylglucosaminyltransferase

AUTHOR: Wingert W E; Cheng P W
SOURCE: Biochemistry, (1984 Feb 14) Vol. 23, No. 4, pp. 690-7.
Journal code: 0370623. ISSN: 0006-2960.
PUB. COUNTRY: United States
DOCUMENT TYPE: (COMPARATIVE STUDY)
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198406
ENTRY DATE: Entered STN: 19 Mar 1990
Last Updated on STN: 3 Feb 1997
Entered Medline: 1 Jun 1984

AB We have characterized a UDP-GlcNAc:Gal beta-3-GalNAc (GlcNAc----GalNAc) beta-6-N-acetylglucosaminyltransferase from rabbit small intestinal epithelium by using freezing point depression glycoprotein as the acceptor. Optimal enzyme activity was obtained at pH 7.0-7.5, at 3 mM MnCl2, and at 0.08% Triton X-100. Ca2+, Mg2+, and Ba2+ also enhanced enzyme activity. The apparent Michaelis constant was 4.80 mM for freezing point depression glycoprotein, 0.59 mM for periodate-treated porcine submaxillary mucin, 0.49 mM for Gal beta 1----3 GalNAc alpha Ph, and 1.03 mM for UDP-GlcNAc. No enzyme activity was observed when asialo ovine submaxillary mucin was used as the acceptor. The 14C-labeled oligosaccharide obtained by alkaline borohydride treatment of the product was shown to be a homogeneous trisaccharide by compositional analysis, Bio-Gel P-4 gel filtration, and high-performance liquid chromatography. The structure of the trisaccharide was identified as Gal beta 1----3-(GlcNAc beta 1----6)GalNAc-H2 by (a) identification of 2,3,4,6-tetramethyl-1,5-diacetylgalactitol and 1,4,5-trimethyl-3,6-diacetyl-2-N-methylacetamidogalactitol by gas-liquid chromatography-mass spectrometry and (b) the complete cleavage of the newly formed glycosidic bond by jack bean beta-hexosaminidase. The structure of the trisaccharide was confirmed by 1H nuclear magnetic resonance (270 MHz) and also by periodate oxidation of the trisaccharide followed by NaBH4 reduction, 4 N HCl hydrolysis, a second NaBH4 reduction, and the identification of threosaminitol on an amino acid analyzer. By acceptor competition studies, the enzyme activity was shown to be a much N-acetylglucosaminyltransferase. We postulate that this glycosyltransferase may play a key role in the regulation of mucin oligosaccharide synthesis.

L28 ANSWER 29 OF 43 MEDLINE on STN
ACCESSION NUMBER: 84158131 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6705674
TITLE: [New method of cleaving the N-linked carbohydrate chains of glycoproteins using alkaline lithium borohydride].
Novyi metod otshchepleniia N-sviazannykh uglevodnykh tsepei glikoproteinov s pomoshch'iu shchelochnogo borgidrida litiia.
AUTHOR: Likhosherstov L M; Novikova O S; Derevitskaia V A; Kochetkov N K
SOURCE: Doklady Akademii nauk SSSR, (1984 Jan-Feb) Vol. 274, No. 1, pp. 222-5.
Journal code: 7505465. ISSN: 0002-3264.
PUB. COUNTRY: USSR
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: Russian
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198405
ENTRY DATE: Entered STN: 19 Mar 1990
Last Updated on STN: 3 Feb 1997

Entered Medline: 16 May 1984

L28 ANSWER 30 OF 43 MEDLINE on STN
ACCESSION NUMBER: 84104112 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6229247
TITLE: Guinea-pig kidney beta-N-acetylgalactosaminyltransferase towards Tamm-Horsfall glycoprotein. Requirement of sialic acid in the acceptor for transferase activity.
AUTHOR: Serafini-Cessi F; Dall'Olio F
SOURCE: The Biochemical journal, (1983 Dec 1) Vol. 215, No. 3, pp. 483-9.
Journal code: 2984726R. ISSN: 0264-6021.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198402
ENTRY DATE: Entered STN: 19 Mar 1990
Last Updated on STN: 27 Jun 1996
Entered Medline: 20 Feb 1984

AB A beta-N-acetylgalactosaminyltransferase that preferentially transferred N-acetylgalactosamine to Sd(a-) Tamm-Horsfall glycoprotein was found in guinea-pig kidney microsomal preparations. This enzyme was kidney-specific and was able to transfer the sugar to other glycoproteins, such as fetuin and alpha 1-acidic glycoprotein. The presence of sialic acid in the acceptors was essential for the transferase activity when either glycoproteins or their Pronase glycopeptides were used as acceptors. Two glycopeptides (Tamm-Horsfall glycopeptides I and II) with a different carbohydrate composition were separated by DEAE-Sephacel chromatography from Pronase-digested Tamm-Horsfall glycoprotein. The amount of N-acetylgalactosamine transferred to glycopeptides by the enzyme correlated with their degree of sialylation. Enzymic digestion of N-[14C]acetylgalactosamine-labelled Tamm-Horsfall glycopeptide II showed that the transferred sugar was susceptible to beta-N-hexosaminidase. The amount of sugar cleaved by beta-hexosaminidase was strongly increased when the labelled Tamm-Horsfall glycopeptide II was pretreated with mild acid hydrolysis, a procedure that removed the sialic acid residues. Alkaline borohydride treatment of the labelled Tamm-Horsfall glycopeptide II did not release radioactivity, thus indicating that enzymic glycosylation took place at the N-asparagine-linked oligosaccharide units of Tamm-Horsfall glycoprotein.

L28 ANSWER 31 OF 43 MEDLINE on STN
ACCESSION NUMBER: 84026247 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6414703
TITLE: Specific method for the fragmentation of the polypeptide chain of glycoproteins. Distribution of carbohydrate chains on the peptide core of blood-group-specific glycoprotein.
AUTHOR: Derevitskaya V A; Likhosherstov L M; Martynova M D; Kochetkov N K
SOURCE: Carbohydrate research, (1983 Aug 16) Vol. 120, pp. 85-94.
Journal code: 0043535. ISSN: 0008-6215.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198312
ENTRY DATE: Entered STN: 19 Mar 1990
Last Updated on STN: 19 Mar 1990
Entered Medline: 20 Dec 1983

AB A method for specific fragmentation of the polypeptide backbone of

glycoproteins at the glycosylated serine and threonine residues has been developed. The fragmentation includes beta-elimination of the carbohydrate chains, followed by bromination of the resulting enamine groups, and cleavage of the brominated amino acid residues by alkaline sodium borohydride. The method was employed for fragmentation of the peptide core of pig blood-group substance H. Essentially all the serine and threonine residues were shown to be O-glycosylated, and rather frequently either adjacent or separated by a single amino acid (mainly alanine). When they were separated by two or three amino acid residues, proline was preponderant.

L28 ANSWER 32 OF 43 MEDLINE on STN
ACCESSION NUMBER: 84002029 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6311416
TITLE: Selective release of the disaccharide 2-acetamido-2-deoxy-3-O-(beta-D-galactopyranosyl)-D-galactose from epiglycanin by endo-N-acetyl-alpha-D-galactosaminidase.
AUTHOR: Bhavanandan V P; Codington J F
CONTRACT NUMBER: CA-08418 (NCI)
CA-15483 (NCI)
SOURCE: Carbohydrate research, (1983 Jul 16) Vol. 118, pp. 81-9.
Journal code: 0043535. ISSN: 0008-6215.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198311
ENTRY DATE: Entered STN: 19 Mar 1990
Last Updated on STN: 3 Feb 1997
Entered Medline: 23 Nov 1983

AB Epiglycanin, the major glycoprotein of TA3-Ha mammary carcinoma ascites cells, was radiolabeled with tritium in the terminal D-galactose and 2-acetamido-2-deoxy-D-galactose residues. Alkaline-borohydride treatment, reported to release five O-glycosyl-linked chain types from epiglycanin, resulted in the cleavage of 98-99% of the radioactivity from the protein. Of this, 63% of the radioactivity from epiglycanin and 70% from asialoepiglycanin co-migrated with an authentic sample of 2-acetamido-2-deoxy-3-O-(beta-D-galactopyranosyl)-D-galactitol on a column of Bio-Gel P-6. Incubation of [3H]galactose-epiglycanin with endo-N-acetyl -alpha-D-galactosaminidase (Diplococcus pneumoniae), and fractionation of the mixture on a column of Bio-Gel P-4, gave only one oligosaccharide peak containing 62 and 70%, respectively, of the radioactivity of epiglycanin and asialoepiglycanin. This oligosaccharide comigrated with authentic 2-acetamido-2-deoxy-3-O-(beta-D-galactopyranosyl)-D-galactose (1) on columns of Bio-Gel P-2 and P-4 and on paper chromatograms. Results of experiments in which unlabeled epiglycanin was treated with enzyme and the products analyzed, by three different methods, suggested that 78-85% of 1 had been cleaved. Another enzyme, N-acetyl-alpha-D-galactosaminyl-oligosaccharidase from Clostridium perfringens, exhibited similar specificity and cleaved 65% of the radioactivity from ([3H]galactose)asialoepiglycanin, which was eluted from a Bio-Gel P-2 column as the disaccharide 1.

L28 ANSWER 33 OF 43 MEDLINE on STN
ACCESSION NUMBER: 83186139 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6404904
TITLE: Isolation and characterization of a glycoprotein from a human rectal adenocarcinoma.
AUTHOR: Nakajima H; Kurosaka A; Fujisawa A; Kawasaki T; Funakoshi I; Matsuyama M; Nagayo T; Yamashina I
SOURCE: Journal of biochemistry, (1983 Feb) Vol. 93, No. 2, pp. 651-9.
Journal code: 0376600. ISSN: 0021-924X.

PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198306
ENTRY DATE: Entered STN: 18 Mar 1990
Last Updated on STN: 18 Mar 1990
Entered Medline: 17 Jun 1983

AB A mucin-type glycoprotein was isolated from a human rectal adenocarcinoma, mainly be gel filtration and hydroxyapatite treatment. The glycoprotein, designated as rectal mucin-type glycoprotein (RMG), was great in amount, accounting for about 1% of the wet tissue weight. From a non-cancerous area of the patient's intestine, a similar glycoprotein reacting with anti-RMG antibodies was obtained, but the tissue content was less than 10% of the RMG content. Purified RMG contained about 70% carbohydrate in mass, and is composed of about equimolar amounts of sialic acid, galactose, N-acetylglucosamine and N-acetylgalactosamine. The polypeptide core was characterized by high contents of threonine, serine, and proline. A marked difference between RMG and the normal glycoproteins was that the sialic acid content was much higher in RMG. Of the total N-acetylgalactosamine convertible to N-acetylgalactosaminitol by reductive cleavage with alkaline borohydride, about 15% was free and the rest occupied the reducing ends of acidic oligosaccharides. The acidic oligosaccharides were fractionated into a fraction of high molecular weight and a series of oligosaccharides in which di- and trisaccharides containing sialic acid were dominant. The high molecular weight fraction contained esterified sulfate.

L28 ANSWER 1 OF 43 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1991:97690 CAPLUS
DOCUMENT NUMBER: 114:97690
TITLE: A method for the splitting of the carbohydrate chains from N-glycoproteins with sodium borohydride-barium chloride or strontium chloride
AUTHOR(S): Likhosherstov, L. M.; Novikova, O. S.; Derevitskaya, V. A.; Kochetkov, N. K.
CORPORATE SOURCE: N. D. Zelinskii Inst. Org. Chem., Moscow, USSR
SOURCE: Bioorganicheskaya Khimiya (1990), 16(10), 1386-92
CODEN: BIKHD7; ISSN: 0132-3423
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB A reductive system NaBH4-BaCl2 or SrCl2 is proposed to cleave the carbohydrate chains of N-glycoproteins. The method allows one to obtain intact oligosaccharides (in 50-60% yields) including alkali -labile fucose-containing oligosaccharides from plant N-glycoproteins (Sambucus nigra bark lectins).

L28 ANSWER 2 OF 43 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1984:506875 CAPLUS
DOCUMENT NUMBER: 101:106875
TITLE: Reductive cleavage of Xaa-proline peptide bonds by mild alkaline borohydride treatment employed to release O-glycosidically linked carbohydrate units of glycoproteins
AUTHOR(S): Shimamura, Michio; Inoue, Yasuo; Inoue, Sadako
CORPORATE SOURCE: Fac. Sci., Univ. Tokyo, Tokyo, 113, Japan
SOURCE: Archives of Biochemistry and Biophysics (1984), 232(2), 699-706
CODEN: ABBIA4; ISSN: 0003-9861
DOCUMENT TYPE: Journal
LANGUAGE: English
AB During the deglycosylation reaction of fish egg polysialoglycoproteins under the conditions of 1M NaBH4 in 0.1M NaOH at 37° for 48 h, a marked loss of the glycine content was encountered besides the serine and threonine residues to which the carbohydrate units are linked. The chemical basis behind this phenomenon was elucidated by amino acid anal. first of the major glycopeptides (carbohydrate-(O)Thr-Gly-Pro-Ser) derived from desialylated polysialoglycoproteins and subsequently 6 proline-containing peptides before and after treatment under similar conditions. It was thus established that Xaa-Pro sequences are remarkably susceptible to reductive cleavage under such mild aqueous conditions. In view of the finding that the reductive cleavage of insulin B-chain, which contains a single proline residue adjacent and C-terminal to a threonine residue, led to .apprx.80% loss of the threonine residue, deglycosylation with alkaline borohydride reagents warrants a special comment. The decreased amts. of serine or threonine residues cannot be related simply to the degree of glycosylation of these residues. The above results are therefore discussed in relation to other work.

L28 ANSWER 3 OF 43 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1984:171084 CAPLUS
DOCUMENT NUMBER: 100:171084
TITLE: New method for cleaving N-linked carbohydrate chains of glycoproteins using alkaline lithium borohydride
AUTHOR(S): Likhosherstov, L. M.; Novikova, O. S.; Derevitskaya, V. A.; Kochetkov, N. K.
CORPORATE SOURCE: Inst. Org. Khim. im. Zelinskogo, Moscow, USSR
SOURCE: Doklady Akademii Nauk SSSR (1984), 274(1), 222-5
[Biochem.]

CODEN: DANKAS; ISSN: 0002-3264
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB The proposed method uses alkaline LiBH4 (1M LiBH4 plus 0.05M LiOH in 70% aqueous tert-BuOH (CaO); 16 h, 50°) for cleaving the N-linked carbohydrate chains of glycoproteins, e.g., ovalbumins, ovomucoids, and light-chain of hemagglutinin of influenza virus A. Excess LiBH4 is decomposed with 20% AcOH, the H3BO3 is removed, and the mixture is chromatographed on Sephadex G 15. Under the exptl. conditions selected, 35-40% of the oligosaccharides from ovalbumins and ovomucoids were cleaved and 60% from the light-chain of hemagglutinin. Repeated processing of the glycopeptide fraction of the ovalbumins and ovomucoids cleaved an addnl. amount of oligosaccharides (total yield 45-50%). More severe hydrogenolysis conditions (70°; increase in the concentration of LiBH4 to 2.5M or LiOH to 0.1M) had no substantial effect on the yield. Use of aqueous THF instead of tert-BuOH decreased the yield, and no reaction took place in nonaq. solvents.

L28 ANSWER 4 OF 43 MEDLINE on STN
ACCESSION NUMBER: 1998426101 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9751794
TITLE: Identification of the glycosidically bound sialic acid in mucin glycoproteins that reacts as "free sialic acid" in the Warren assay.
AUTHOR: Bhavanandan V P; Ringler N J; Gowda D C
CORPORATE SOURCE: Department of Biochemistry and Molecular Biology, Milton S. Hershey Medical Center, Pennsylvania State University College of Medicine, Hershey, PA 17033, USA.
CONTRACT NUMBER: DK 47511 (NIDDK)
SOURCE: Glycobiology, (1998 Nov) Vol. 8, No. 11, pp. 1077-86. Journal code: 9104124. ISSN: 0959-6658.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T) (RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199811
ENTRY DATE: Entered STN: 15 Jan 1999
Last Updated on STN: 15 Jan 1999
Entered Medline: 30 Nov 1998
AB A widely employed colorimetric assay for sialic acids based on periodate oxidation followed by reaction with thiobarbituric acid depends on the formation of a hexos-5-uluronic acid product, the pre-chromogen, by the periodate cleavage of the C6-C7, C7-C8, and C8-C9 bonds in free sialic acid. Glycosidically bound sialic acids are not expected to react in the assay since cleavage cannot occur between C6-C7 to yield the pre-chromogen. However, several investigators have reported the detection of a positive reaction by certain sialoglycoconjugates. In this study, it was found that various mucins but not other classes of sialoglycoconjugates or asialomucins exhibited this phenomenon. Of the mucins tested, ovine submaxillary mucin showed the maximum reactivity followed by the bovine and porcine counterparts. The disaccharide Neu5Acalpha2-->6 GalNAc(OH) released from mucins by alkaline borohydride treatment also reacted, albeit weakly compared to the native mucins, but other sialyl saccharides including 6'-sialyllactose and 6'-sialyl N -acetyllactosamine did not react. The positive reaction of the submaxillary mucins is not due to the presence of 3-deoxy-d-glycero-d-galacto-2-nonulosonic acid (KDN), a minor component in submaxillary mucins, or the release of sialic acid by the acidic condition of the assay. It is demonstrated that sialyl residues linked alpha2-->6 to unsubstituted N -acetylgalactosamine (sialyl Tn antigen structure) in mucin glycoproteins is responsible for the positive reaction. Apparently, periodate oxidation of the N -acetylgalactosamine residue

leads to the release of sialic acid from the Neu5Acalpha2-->6 GalNAc linked to serine/threonine by an acid-catalyzed beta-elimination reaction. The findings provide a basis for the development of a chemical method to estimate sialyl Tn epitopes associated with cancer cells.

L28 ANSWER 5 OF 43 MEDLINE on STN
ACCESSION NUMBER: 97155492 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9002191
TITLE: Disulfated oligosaccharides derived from tracheobronchial mucous glycoproteins of a patient suffering from cystic fibrosis.
AUTHOR: Chance D L; Mawhinney T P
CORPORATE SOURCE: Department of Biochemistry, University of Missouri-Columbia 65211, USA.
SOURCE: Carbohydrate research, (1996 Dec 13) Vol. 295, pp. 157-77.
Journal code: 0043535. ISSN: 0008-6215.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199702
ENTRY DATE: Entered STN: 5 Mar 1997
Last Updated on STN: 5 Mar 1997
Entered Medline: 19 Feb 1997

AB Twenty novel disulfated oligosaccharides were purified in nanomolar quantities from tracheo-bronchial mucous glycoproteins from a patient with cystic fibrosis via cleavage by alkaline borohydride treatment, followed by anion-exchange chromatography, size-exclusion chromatography, and high-performance liquid chromatography (HPLC). In addition to positive ion fast-atombombardment mass spectrometry (FABMS), proposed structures for the resulting purified disulfated oligosaccharides were also based on carbohydrate permethylation analyses, periodate oxidation, complete sequential exoglycosidase digestion, and parallel analysis of desulfated products. Sulfate esters were found to reside on C-3 or C-6 of terminal D-galactose and on C-6 of internal D-galactose or 2-acetamido-2-deoxy-D-glucose residues. For this group of oligosaccharides, ranging in size from tri- to undeca-saccharides and possessing linear, di- and tri-antennary forms, it was also observed that sulfate esters could be located on the same or on different branches and that branched oligosaccharides can possess sulfate esters on C-3 and C-6 of different terminal galactose residues within the same structure.

L28 ANSWER 6 OF 43 MEDLINE on STN
ACCESSION NUMBER: 95181565 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7876332
TITLE: Characterization of the major sulfated protein of mouse pancreatic acinar cells: a high molecular weight peripheral membrane glycoprotein of zymogen granules.
AUTHOR: De Lisle R C
CORPORATE SOURCE: Department of Anatomy and Cell Biology, University of Kansas Medical Center, Kansas City 66160.
CONTRACT NUMBER: GM-41388 (NIGMS)
SOURCE: Journal of cellular biochemistry, (1994 Nov) Vol. 56, No. 3, pp. 385-96.
Journal code: 8205768. ISSN: 0730-2312.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199503
ENTRY DATE: Entered STN: 19 Apr 1995
Last Updated on STN: 19 Apr 1995

Entered Medline: 31 Mar 1995

AB The major sulfated protein of the mouse pancreatic acinar cell, gp300, has been identified and characterized with monoclonal and polyclonal antibodies. gp300 is a glycoprotein of M(r) = 300,000 which contains approximately 40% of metabolically incorporated [35S]sulfate in the acinar cell. Sulfate on gp300 is resistant to hot 1N HCl, but sensitive to alkaline hydrolysis, demonstrating that the sulfate is carbohydrate-linked rather than tyrosine-linked. gp300 metabolically labeled with [3H]glucosamine and [35S]sulfate was chemically and enzymatically treated followed by Bio-Gel P-10 gel filtration. Both labels were resistant to treatments which degrade glycosaminoglycans. Treatment of dual-labeled gp300 with PNGase F to cleave N-linked oligosaccharides released approximately 17% of [3H] and little [35S]. Mild alkaline borohydride treatment after removal of N-linked sugar released the remainder of both labels, indicating the presence of sulfated O-linked oligosaccharides. Biosynthesis studies and PNGase F digestion indicate that the core protein is approximately 210 kDa, with apparent contributions of approximately 35 kDa N-linked sugar, and approximately 55 kDa O-linked sugar. Lectin blotting and glycosidase digestion demonstrated the presence of Gal beta(1-3)GalNAc and sialic acid alpha(2-3)Gal in O-linked oligosaccharide, and Gal beta(1-4)GlcNAc in N-linked oligosaccharide. Immunolocalization and subcellular fractionation showed that gp300 is a peripheral membrane protein localized to the lumenal face of the zymogen granule membrane. gp300 was not secreted in response to hormone stimulation of acini, so it is not a secretory product. Immunoblot analysis showed that gp300 is present in other gastrointestinal tissues and parotid glands. Localization of this nonsecreted sulfated glycoprotein to exocrine secretory granule membranes suggests that gp300 may have a role in granule biogenesis.

L28 ANSWER 7 OF 43 MEDLINE on STN

ACCESSION NUMBER: 93286121 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7685350
TITLE: Characterization of a specific ligand for P-selectin on myeloid cells. A minor glycoprotein with sialylated O-linked oligosaccharides.
AUTHOR: Norgard K E; Moore K L; Diaz S; Stults N L; Ushiyama S; McEver R P; Cummings R D; Varki A
CORPORATE SOURCE: Glycobiology Program, UCSD Cancer Center, La Jolla 92093.
CONTRACT NUMBER: CA37626 (NCI)
CA38701 (NCI)
HL 34363 (NHLBI)
+
SOURCE: The Journal of biological chemistry, (1993 Jun 15) Vol. 268, No. 17, pp. 12764-74.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199307
ENTRY DATE: Entered STN: 23 Jul 1993
Last Updated on STN: 3 Mar 2000
Entered Medline: 13 Jul 1993

AB Lectin-carbohydrate recognition between the selectins and their ligands are among the earliest events in leukocyte recirculation, leukocyte recruitment into inflamed areas, and abnormal egress of leukocytes in diseases. Previously, we have described a dimeric sialoglycoprotein from myeloid cells with subunits of molecular mass = 120 kDa, which is selectively recognized by P-selectin (Moore, K.L., Stults, N.L., Diaz, S., Smith, D.F., Cummings, R.D., Varki, A., and McEver, R.P. (1992) J. Cell Biol. 188, 445-456). Here, we demonstrate

that this P-selectin ligand carries alpha 2-3-linked sialic acids and the sialyl-Lewisx (SLex) tetrasaccharide motif. This glycoprotein contains < 1% of the total membrane-bound sialic acids and a very small fraction of the total SLex on neutrophil membranes. In spite of a relative resistance to sialidase digestion, the predominant form of sialic acid on the ligand is N-acetylneuraminic acid. Selective periodate oxidation of the side chain of sialic acids does not affect P-selectin binding and allows the introduction of tritium label into the truncated sialic acids. beta-Elimination with alkaline borohydride releases labeled O-linked oligosaccharides both from the labeled neutrophil ligand and from the ligand purified from HL-60 cells metabolically labeled with [3H]glucosamine. The ligand from both neutrophils and HL-60 cells is also susceptible to cleavage by the enzyme O-sialoglycoprotease from Pasteurella hemolytica. Analysis of the specificity of this enzyme suggests that the P-selectin ligand carries large numbers of closely spaced sialylated O-linked oligosaccharides. O-Sialoglycoprotease abolishes both direct binding of P-selectin to HL-60 cells and the adhesion of HL-60 cells to immobilized P-selectin, without significantly decreasing overall cell surface SLex expression. This indicates that the 120-kDa ligand may be the major determinant of P-selectin:myeloid cell interaction in vivo. Finally, based on the current and previous data, we hypothesize that the high affinity recognition site(s) of this P-selectin ligand may be derived from a "clustered saccharide patch" of sialylated fucosylated O-linked oligosaccharide sequences.

L28 ANSWER 8 OF 43 MEDLINE on STN
ACCESSION NUMBER: 93113628 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1473102
TITLE: Sulfated sialyl-oligosaccharides derived from tracheobronchial mucous glycoproteins of a patient suffering from cystic fibrosis.
AUTHOR: Mawhinney T P; Landrum D C; Gayer D A; Barbero G J
CORPORATE SOURCE: Department of Biochemistry, University of Missouri Medical Center, Columbia 65211.
CONTRACT NUMBER: HL-32026 (NHLBI)
SOURCE: Carbohydrate research, (1992 Nov 4) Vol. 235, pp. 179-97. Journal code: 0043535. ISSN: 0008-6215.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199302
ENTRY DATE: Entered STN: 19 Feb 1993
Last Updated on STN: 19 Feb 1993
Entered Medline: 3 Feb 1993

AB Thirteen novel oligosaccharides, each possessing both a sulfate ester and a sialic acid residue, were isolated from tracheobronchial mucous glycoproteins from a patient with cystic fibrosis via cleavage by alkaline borohydride treatment, and by employing immobilized Limulus polyphemus lectin affinity chromatography, SynChroprep AX300 anion-exchange chromatography, Bio-Gel P-2 size-exclusion chromatography, and Hypersil 120A APS-2 high-performance liquid chromatography (HPLC). Proposed structures for the resulting purified sulfated sialyl-oligosaccharides were based on carbohydrate/permethylation analyses, periodate oxidation, complete sequential exoglycosidase digestion, analysis of desulfated products and, analysis by positive-ion fast-atom-bombardment mass spectrometry (FABMS). Sulfate esters on these sialyl-oligosaccharides resided on C-6 of a terminal or an internal D-galactose or 2-acetamido-2-deoxy-D-glucose residue or C-4 of a terminal D-galactose residue. The sialic acid residues were found to be either bound (2-->6)-alpha to 2-acetamido-2-deoxy-D-galactitol or (2-->3)-alpha or (2-->6)-alpha to a

D-galactose residue occupying a nonreducing terminus. For this group of oligosaccharides, ranging in size from tri- to hepta-saccharides, it was also observed that a sialic acid residue and a sulfate ester did not residue on the same oligosaccharide branch when more than one branch existed. On linear unbranched sulfated sialyl-oligosaccharides, the sialic acid residue was bound to a D-galactose residue occupying a nonreducing terminus with the sulfate ester residing on an internal D-galactose or a 2-acetamido-2-deoxy-D-glucose residue. These results demonstrate that it is possible for sialic acid and a sulfate ester to exist on the same oligosaccharide and that this oligosaccharide can be as small as a trisaccharide.

L28 ANSWER 9 OF 43 MEDLINE on STN
ACCESSION NUMBER: 92175078 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1541329
TITLE: High molecular weight mucin-like glycoproteins of the bovine interphotoreceptor matrix.
AUTHOR: Plantner J J
CORPORATE SOURCE: Lorand V. Johnson Laboratory for Research in Ophthalmology, Department of Surgery, Case Western Reserve University, Cleveland, OH 44106.
CONTRACT NUMBER: EY 06571 (NEI)
SOURCE: Experimental eye research, (1992 Jan) Vol. 54, No. 1, pp. 113-25.
Journal code: 0370707. ISSN: 0014-4835.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199204
ENTRY DATE: Entered STN: 24 Apr 1992
Last Updated on STN: 24 Apr 1992
Entered Medline: 8 Apr 1992

AB A very high molecular weight mucin-like glycoprotein was isolated by gel filtration of interphotoreceptor matrix (IPM) from fresh bovine eyes and purified to apparent homogeneity by cesium chloride/guanidine hydrochloride (GuHCl) equilibrium density gradient centrifugation. Although a molecular weight in excess of 10(7) Da is suggested by gel filtration, the presence of SDS or GuHCl did not alter its elution position, indicating that the large size was not simply due to aggregation. Treatment of this material with disulfide reagents, however, led to a decrease in molecular size. On a relative basis, substantially more of this glycoprotein is present in IPM prepared from retina than from retinal pigment epithelium. While the carbohydrate and amino acid composition are not those of a true 'mucin', the large size and many other properties are quite 'mucin-like'. The carbohydrate composition suggests the presence of both N- and O-glycosidically linked sugar chains. The presence of a mucin-type O-glycosidic linkage is indicated by its susceptibility to alkaline cleavage, with concomitant loss of serine and threonine and increase in 240 nm absorbance; production of a fluorescent product upon reaction with cyanoacetamide; lectin binding properties; and production of N-acetylgalactosaminitol upon alkaline borohydride elimination. This glycoprotein was digested by pronase and trypsin, confirming its protein nature, but was resistant to digestion with chondroitin ABC lyase, hyaluronidase and heparinase, as well as RNAase, indicating that these components were not present to any appreciable extent. ELISA for cartilage keratan sulfate was also negative. Centrifugation in CsCl/GuHCl gradients indicated a density much lower than that of a proteoglycan or nucleic acid as well. In vitro biosynthetic studies suggest that both retina and retinal pigment epithelium may be major sources of material in the IPM. The elution patterns of radioactivity were strikingly similar to

the UV elution patterns of IPM. The medium from retinal incubations contained very high molecular weight material which was resistant to enzymes which hydrolyse glycosaminoglycans, suggesting that retina may be the source of this high molecular weight, mucin-like glycoprotein
.

L28 ANSWER 10 OF 43 MEDLINE on STN
ACCESSION NUMBER: 91248099 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1903925
TITLE: Mucins in cat airway secretions.
AUTHOR: Davies J R; Gallagher J T; Richardson P S; Sheehan J K; Carlstedt I
CORPORATE SOURCE: Department of Physiology, St. George's Hospital and Medical School, London, U.K.
SOURCE: The Biochemical journal, (1991 May 1) Vol. 275 (Pt 3), pp. 663-9.
Journal code: 2984726R. ISSN: 0264-6021.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199107
ENTRY DATE: Entered STN: 19 Jul 1991
Last Updated on STN: 19 Jul 1991
Entered Medline: 3 Jul 1991

AB Mucous secretions were obtained from cat tracheas that had received [3H]glucose and [35S]sulphate to radiolabel mucus glycoproteins biosynthetically. Samples were collected under resting ('basal') conditions as well as after pilocarpine stimulation and were separated into gel and sol phases by centrifugation. Macromolecules were partially purified by using gel chromatography on Sepharose CL-4B, and the species that were eluted with the void volume were then separated into two major populations with isopycnic density-gradient centrifugation in CsCl. The major component from the gel phase of pilocarpine-induced secretions had a buoyant density typical of mucins and was observed as linear and apparently flexible chains by electron microscopy. Reduction of disulphide bonds gave subunits that could be further cleaved by trypsin digestion into components of approximately the same size as the high-Mr glycopeptides obtained from other mucins after this treatment. In contrast, the dominant species in the gel phase of the 'basal' secretion had a significantly higher buoyant density than expected for mucins and was largely unaffected by reduction, as studied by gel chromatography. The macromolecules were fragmented by trypsin, suggesting that they contain a polypeptide backbone. This more dense component also predominated in the sol phase both from the 'basal' secretions and from the pilocarpine-released secretions. Digestion with DNAase, chondroitin ABC lyase or heparan sulphate lyase had no effect, which shows that this component is not DNA, a dermatan sulphate/chondroitin sulphate or a heparan sulphate proteoglycan. In contrast, endo-beta-galactosidase and keratanase caused some fragmentation, suggesting that the molecules contain some linkages of the poly-(N-acetyl-lactosamine) type, although the degradation was not as extensive as expected for keratan sulphate. Treatment with alkaline borohydride resulted in extensive fragmentation of the high-Mr glycopeptides from both components, indicating that the glycans were oligosaccharides that were probably O-linked. The monosaccharide compositions of both components were consistent with that expected for mucins. The data are in keeping with the major component from the pilocarpine-stimulated gel secretions being a mucus glycoprotein and the more dense component being a mucin-like molecule, possibly related to the keratanase-sensitive material isolated from canine trachea by Varsano, Basbaum, Forsberg, Borson, Caughey & Nadel [(1987) Exp. Lung Res. 13, 157-184].

L9 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:11024 CAPLUS
DOCUMENT NUMBER: 136:82305
TITLE: Attachment of biomolecules to surfaces of medical devices for improvement of biocompatibility
INVENTOR(S): Keogh, James R.; Trescony, Paul V.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 17 pp., Cont.-in-part of U.S. 5,925,552.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 7
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002001834	A1	20020103	US 1999-257543	19990224
US 6617142	B2	20030909		
US 5821343	A	19981013	US 1996-635187	19960425
US 5728420	A	19980317	US 1996-694535	19960809
US 5891506	A	19990406	US 1997-984922	19971204
US 5945319	A	19990831	US 1997-1994	19971231
US 6033719	A	20000307	US 1998-12056	19980122
US 5925552	A	19990720	US 1998-67188	19980427
US 2004086543	A1	20040506	US 2003-620180	20030715
US 7122356	B2	20061017		
US 2006099326	A1	20060511	US 2005-296810	20051207
US 2006193968	A1	20060831	US 2006-411711	20060426

PRIORITY APPLN. INFO.:

US 1996-635187	A2	19960425
US 1996-694535	A2	19960809
US 1997-984922	A2	19971204
US 1997-1994	A2	19971231
US 1998-12056	A2	19980122
US 1998-67188	A2	19980427
US 1998-10906	A2	19980122
US 1999-257543	A1	19990224
US 2003-620180	A1	20030715

AB A method for making a medical device having at least one biomol. immobilized on a substrate surface is provided. One method of the present invention includes immobilizing a biomol. comprising an unsubstituted amide moiety on a biomaterial surface. Another method of the present invention includes immobilizing a biomol. on a biomaterial surface comprising an unsubstituted amide moiety. Still another method of the present invention may be employed to crosslink biomols. comprising unsubstituted amide moieties immobilized on medical device surfaces. Addnl., one method of the present invention may be employed to crosslink biomols. comprising unsubstituted amide moieties in solution, thereby forming a crosslinked biomaterial or a crosslinked medical device coating. A method of forming a coating on a surface of a medical device for improvement of biocompatibility is described. The method comprises steps of: oxidizing a biomol. containing 2-aminoalc. moiety with a periodate to form an aldehyde-functional material, combining the aldehyde-functional material with a biomaterial surface containing a primary amine moiety to immobilize the biomol. on the substrate surface through an imine moiety, and reacting the imine moiety with a reducing agent to form an immobilized biomol. on the biomaterial surface through a sec. amine linkage. Another method of the present invention may be employed to crosslink biomols. immobilized on medical device surfaces. Addnl., one method of the present invention may be employed to crosslink biomols., thereby forming a crosslinked biomaterial or a crosslinked medical device coating. E.g., type IV collagen was oxidized with NaIO4 and the oxidized collagen was then allowed to form crosslinks, thereby bonding the mols. together

through imine moieties formed from an aldehyde moiety of one collagen mol. reacting with an amine moiety of a neighboring collagen mol. The imine linkages were then stabilized by Na cyanoborohydride to form sec. amine linkages. The resultant crosslinked material may be employed as a biomaterial or as a biomaterial coating.

L9 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:224199 CAPLUS
DOCUMENT NUMBER: 130:257381
TITLE: Oxidative method for attachment of glycoproteins or glycopeptides to surfaces of medical devices
INVENTOR(S): Keogh, James R.
PATENT ASSIGNEE(S): Medtronic, Inc., USA
SOURCE: U.S., 10 pp., Cont.-in-part of U.S. 5,728,420. CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 7
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5891506	A	19990406	US 1997-984922	19971204
US 5728420	A	19980317	US 1996-694535	19960809
AU 9728768	A	19980312	AU 1997-28768	19970721
AU 699145	B2	19981126		
CA 2212602	A1	19980209	CA 1997-2212602	19970808
JP 10085321	A	19980407	JP 1997-216492	19970811
US 5928916	A	19990727	US 1998-10906	19980122
US 6033719	A	20000307	US 1998-12056	19980122
US 5925552	A	19990720	US 1998-67188	19980427
WO 9927968	A2	19990610	WO 1998-US25656	19981203
WO 9927968	A3	19990902		
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 1035871	A2	20000920	EP 1998-960695	19981203
EP 1035871	B1	20040331		
R: DE, FR				
US 2002001834	A1	20020103	US 1999-257543	19990224
US 6617142	B2	20030909		
US 2004086543	A1	20040506	US 2003-620180	20030715
US 7122356	B2	20061017		
US 2006099326	A1	20060511	US 2005-296810	20051207
US 2006193968	A1	20060831	US 2006-411711	20060426
US 2007048352	A1	20070301	US 2006-507172	20060821

PRIORITY APPLN. INFO.:

US 1996-694535	A2	19960809
US 1996-635187	A2	19960425
US 1997-984922	A2	19971204
US 1997-1994	A	19971231
US 1998-10906	A2	19980122
US 1998-12056	A	19980122
US 1998-67188	A2	19980427
WO 1998-US25656	W	19981203
US 1999-257543	A1	19990224
US 2003-620180	A1	20030715

AB A method for making a medical device having at least one glycoprotein and/or glycopeptide immobilized on a substrate surface is provided. The method may include oxidizing 1,2-dihydroxy moieties with a periodate to form an aldehyde-functional material; combining the aldehyde-functional material with an amino-functional material to bond the two materials together through an imine moiety; and reacting the imine moiety with a reducing agent to form a secondary amine. Another method of the present invention may be employed to crosslink glycoproteins and/or glycopeptides immobilized on medical device surfaces. Addnl., one method of the present

invention may be employed to crosslink glycoproteins and/or glycopeptides, thereby forming a crosslinked biomaterial or a crosslinked medical device coating.

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1998:175703 CAPLUS
DOCUMENT NUMBER: 128:221682
TITLE: Medical device having a glycoprotein immobilized on a substrate surface
INVENTOR(S): Keogh, James R.
PATENT ASSIGNEE(S): Medtronic, Inc., USA
SOURCE: Eur. Pat. Appl., 9 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 7
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 826382	A2	19980304	EP 1997-306034	19970808
EP 826382	A3	19990818		
EP 826382	B1	20030115		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 5728420	A	19980317	US 1996-694535	19960809
AU 9728768	A	19980312	AU 1997-28768	19970721
AU 699145	B2	19981126		
CA 2212602	A1	19980209	CA 1997-2212602	19970808
JP 10085321	A	19980407	JP 1997-216492	19970811

PRIORITY APPLN. INFO.: US 1996-694535 A 19960809

AB A method for making a medical device having a glycoprotein immobilized on a substrate surface is provided. The method comprises the steps of: (a) oxidizing 1,2-dihydroxy moieties with a periodate to form an aldehyde-functional material; (b) combining the aldehyde-functional material with an amino-functional material to bond the two materials together through an imine moiety; and (c) reacting the imine moiety with a reducing agent to form a secondary amine. Fibronectin was first oxidized with sodium metaperiodate, forming reactive aldehyde groups. Acrylamide and N-(3-aminopropyl)methacrylamide monomers were graft copolymd. onto an ozone-treated surface. Following grafting, oxidized fibronectin was coupled to the amine-containing derivatized substrate surface. Sodium cyanoborohydride was then used to stabilize the imine linkages.

L2 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:414514 CAPLUS
DOCUMENT NUMBER: 140:407067
TITLE: Method of preparation of oligosaccharides
INVENTOR(S): Huang, Yunping; Konse, Tomonori; Mechref, Yehia S.; Novotny, Milos V.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004096933	A1	20040520	US 2003-664462	20030919
WO 2004045502	A2	20040603	WO 2003-US34088	20031024
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003285006	A1	20040615	AU 2003-285006	20031024

PRIORITY APPLN. INFO.:

US 2002-426861P	P	20021115
US 2003-664462	A	20030919
WO 2003-US34088	W	20031024

AB The invention provides a method of cleaving an O-linked oligosaccharide from a glycoprotein. The method comprises the steps of contacting a composition comprising a glycoprotein, wherein the glycoprotein comprises O-linked oligosaccharides, with a solution comprising a BH3-NH3 complex to form a mixture comprising the glycoprotein and the BH3-NH3 complex, incubating the mixture for a period of time sufficient to cleave the linked oligosaccharides from the glycoprotein, and forming a mixture comprising oligosaccharide alditol products and deglycosylated protein byproducts.

L2 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:469613 CAPLUS
DOCUMENT NUMBER: 137:259501
TITLE: Matrix-assisted laser desorption/ionization mass spectrometry compatible β-elimination of O-linked oligosaccharides
AUTHOR(S): Huang, Yunping; Konse, Tomonori; Mechref, Yehia; Novotny, Milos V.
CORPORATE SOURCE: Department of Chemistry, Indiana University, Bloomington, IN, 47405, USA
SOURCE: Rapid Communications in Mass Spectrometry (2002), 16(12), 1199-1204
CODEN: RCMSEF; ISSN: 0951-4198
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A new β-elimination procedure has been introduced to cleave O-linked oligosaccharides from low- to sub-microgram amts. of glycoproteins prior to anal. by mass spectrometry. Borane-ammonia complex in aqueous ammonia is used as a cleaving solution alternative to the sodium borohydride/sodium hydroxide medium conventionally used in

β-elimination. The procedure results in min. sample purification, leading to minimal sample loss and consequently an overall enhancement in sensitivity. It was applied successfully in the anal. of bovine fetuin and submaxillary mucin, as well as to a complex bile-salt-stimulated lipase glycoprotein isolated from human milk.

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 3 OF 3 MEDLINE on STN
ACCESSION NUMBER: 2002361578 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12112272
TITLE: Matrix-assisted laser desorption/ionization mass spectrometry compatible beta-elimination of O-linked oligosaccharides.
AUTHOR: Huang Yunping; Konse Tomonori; Mechref Yehia; Novotny Milos V
CORPORATE SOURCE: Department of Chemistry, Indiana University, Bloomington, IN 47405, USA.
SOURCE: Rapid communications in mass spectrometry : RCM, (2002) Vol. 16, No. 12, pp. 1199-204.
Journal code: 8802365. ISSN: 0951-4198.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, NON-P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200208
ENTRY DATE: Entered STN: 12 Jul 2002
Last Updated on STN: 13 Aug 2002
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L4 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
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DOCUMENT NUMBER: 137:259501
TITLE: Matrix-assisted laser desorption/ionization mass spectrometry compatible β-elimination of O-linked oligosaccharides
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L4 ANSWER 4 OF 4 MEDLINE on STN
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DOCUMENT NUMBER: PubMed ID: 12112272
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